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And MONTHLY
HORTICULTURIST

EDITED BY THOMAS MEEHAN.

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CONTENTS OF THE FEBRUARY NUMBER.

SEASONABLE HINTS:

| | |
|--|----|
| Flower Garden and Pleasure Ground..... | 33 |
| Greenhouse and House Gardening..... | 38 |
| Fruit and Vegetable Gardening..... | 44 |

COMMUNICATIONS:

| | |
|---|----|
| The Government Grounds, Dominion of Canada..... | 34 |
| The American Banner Rose..... | 36 |
| Large Coxcomb..... | 39 |
| Carnation—James A. Garfield..... | 39 |
| Heating Greenhouses with Steam..... | 39 |
| The Mealy Bug on Coleus..... | 39 |
| The Lord Nelson Apple..... | 45 |
| Improvement of the Persimmon..... | 45 |
| Fruit Notes for 1882..... | 46 |
| Cross-Breeding Wheat..... | 52 |
| Notice of the Late James Haggerty, of Poughkeepsie Under the Hawthorns—No. II..... | 57 |

EDITORIAL NOTES:

| | |
|---|-------|
| The Philadelphia Public Squares—Notes from Staunton, Virginia—Rapid Growing Street Trees— The Spring Beauty of Coniferous Trees—The Sack or Bag-Worm..... | 36-37 |
| Large Greenhouses—Lilium Harrisii—Electric Light in Plant Growing—Fragrance of the Gar- denia—Soil for Fuchsias—An Indoor Frame—Prize Orchids—A Good Rose—A Good List of Green- house Ferns..... | 40-41 |
| Bad Seeds—Phylloxera in France—Texan Pros- perity—Autumn-bearing Raspberries—American Apples in England—The Primo Strawberry—The White-Fruited Versailles Currant—The Waste Bones of a Large City—Substitute for Cotton— Dandelion Rum—Large Celery—Good Peas—The Favorite Tomato—The Cabbage Butterfly—Orna- mental Vegetables—Poison in Mushrooms..... | 46-49 |
| Seeds or Plants for Starting Forests—Woods and Forests of South Australia—Forestry Laws— Duties on Mahogany and Rosewood—Spark Ar- restors—Habits of the Aspen—Osage Orange for Silk Worms..... | 50-52 |
| Spiral Growth—Evaporation from Dead Branches —Double Tropaeolum, Hermine Grosshoff—De- fence in Birds' Nests—American Habits of Earth- Worms—Xeranthemum annuum Superbissimum— Handsome Birds' Nests—Pine from the Arctic Re- | |

| | |
|--|-------|
| gions—Formic Acid and Honey—City Smoke— Variation in Cotton Plants—Wet Weather and the Growth of Trees—Absorption of Water by Roots— Heliotropism in Sun-flowers—Crossed Asparagus— Oil from Pine—Fertilization of Flowers by Insect Agency—Honey Dew—The Lacquer Tree of Japan Migrations of Birds..... | 52-56 |
| Gardening and Business—Giant Horse Tails—Sub- Tropical Plants—The London Journal of Botany— Varied Tastes in Food—Mrs. Typographical Errors —Early History of Garden Flowers—A Pleasant Note from a Young Gardener—Sir Hugh Allan— Joseph E. Johnson—The Regulative Action of Birds on Insect Oscillation—Horticultural Direc- tory for 1882..... | 59-63 |
| Premiums at Horticultural Exhibitions—Reports of Horticultural Societies—Amateurs and Florists —The American Pomological Society—Hall of the New York Horticultural Society..... | 64 |

SCRAPS AND QUERIES:

| | |
|---|-------|
| Raising Fine Seeds—Chrysanthemum Maywood— Fir Tree Oil—Seedling Carnations—Aiding the Draft of Flues..... | 43-44 |
| Good Keeping Plums—Seedless Persimmon—Tan- gerine Oranges—Boardman's Tree Paint—Seedling Pears from California..... | 49-50 |
| To Intelligent Correspondents—Pores in the An- nual Layer of Wood..... | 63 |

NEW OR RARE PLANTS AND FRUITS:

| | |
|--|-------|
| A New Hawthorn—Canna Ehemanni—Ampelopsis Japonica—The Double Eschscholtzia—Weigela can- dida..... | 37-38 |
| The Diamond Tuberose—Odontoglossum vexilla- rium—A New Water Lilly—Camellias and Roses— New Chinese Primula..... | 41-43 |

| | |
|---|-------|
| FLOWER GARDEN AND PLEASURE GROUND..... | 33-38 |
| GREENHOUSE AND HOUSE GARDENING..... | 38-44 |
| FRUIT AND VEGETABLE GARDENING..... | 44-50 |
| FORESTRY..... | 50-52 |
| NATURAL HISTORY AND SCIENCE..... | 52-56 |
| LITERATURE, TRAVELS & PERSONAL NOTES..... | 57-63 |
| HORTICULTURAL SOCIETIES..... | 64 |

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THE GARDENERS' MONTHLY AND HORTICULTURIST.

DEVOTED TO HORTICULTURE, ARBORICULTURE AND RURAL AFFAIRS.

Edited by THOMAS MEEHAN.

VOLUME XXV.

FEBRUARY, 1883.

NUMBER 290.

FLOWER GARDEN AND PLEASURE GROUND.

SEASONABLE HINTS.

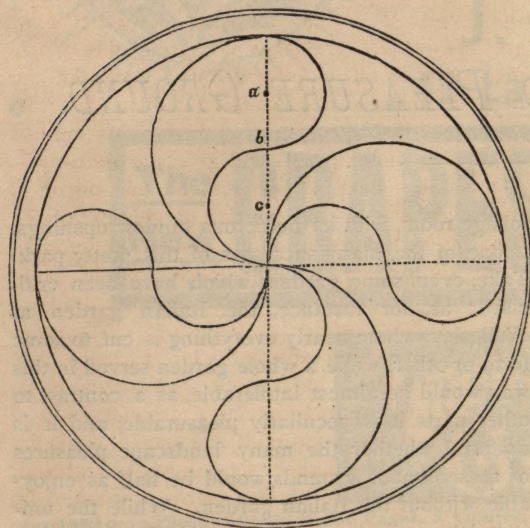
Just now we note much being said against the use of knife or shears on ornamental trees and shrubs. There are some who would not cut a tree under any circumstances. Everything should be natural. There can be no greater advocate of nature, or perhaps it would be best to say of natural ways in gardening, than the GARDENERS' MONTHLY. What has been termed the topiary art—the trimming of trees and bushes to resemble everything under the sun—was pushed to extremes. But without great violence being done to true taste, some such art may surely be permitted. We all like a neatly trimmed box edging wherever it is proper to have an edging of box at all, and the neatly trimmed live fence or hedge is also agreeable. If, now, we allow some of the trees of which the hedge is composed to grow up and form a neatly-trimmed arch over a gateway, we cannot see wherein good taste is seriously violated. In the Tower Grove Park at St. Louis the music-stand is surrounded by a grove of osage orange, which is sheared so as to allow numerous gothic openings through the walls. One might say if a wall is wanted, why not make it of boards or stone at once? But nothing will equal the luxury of sitting under a leafy bower, while the air is actually cooled by passing through the foliage. To our mind, this

foliage room, with its numerous window openings, is one of the many successes of this pretty park. Take, even, some gardens which have been criticised; as, for instance, the Italian garden at Wellesley, where nearly everything is cut to some form or other, while a whole garden served in this way would be almost intolerable, as a contrast to other parts it is peculiarly pleasurable, and it is doubtful whether the many landscape pleasures of these famous grounds would be half as enjoyable without the Italian garden. While the universal cropping and shearing which often takes place at this season gives good excuse to those who write down the entire use of the knife in this way, the better course will probably be to use the knife judiciously. The rule of good taste is expression. If we were to find a tree or shrub growing entirely naturally, and taking on some singular shape, there is no doubt it would be as much an object of interest as profile rocks against mountain sides, or the features of scenery in the great caves. Just how far art may help these appearances good taste must suggest.

In like manner there is rebellion against carpet bedding, and the formal arrangement of flowers in masses, or in beds of formal shape. Of course this is often pushed to the extreme, but when we see hundreds of thousands enjoying them, it is evident there must be an underlying element of natu-

ral feeling somewhere beneath such an edifice of art. It will probably be a long while before this style of gardening is abandoned. There are some figures for flower beds which look out of character. The figures should harmonize with the surroundings. For a circular spot there are few things prettier than the old "Dropmore Pear beds."

In old times this "Dropmore flower garden" was popular for affording masses of four different kinds. The walks between the four pear-shaped beds were of grass or shells, or small cobble-stones. Since carpet-bedding, a close form of mosaic work has become popular, the walks are made with stone-crops, or kinds of house-leeks, or of some kind of neutral colored leaf plant. Besides this a border of some other color is placed round the



whole thing, which gives it a pretty finish. We give with this an illustration of what we mean.

The straight lines are only temporary, to aid the drawing of the figures desired on the ground. To make the larger circle of the pear-shaped outline the compass or string has one end placed at *b*. For the two smaller circles at *a* and *c*.

COMMUNICATIONS.

THE GOVERNMENT GROUNDS, DOMINION OF CANADA.

BY WM. ROBERTSON, SUPERINTENDENT, OTTAWA.

Those grounds, from their natural position, elevated as they are over three hundred feet above the Ottawa River, make a grand impression on all who have visited them. A finer view is seldom

seen. Looking from them to the southwest, you have the Chaudrie Falls, Suspension and C. P. Railway bridges, and as far as the eye can reach the river wending its way upwards, dotted with wood-covered islands. On the background, in the distance, runs a chain of mountains covered to the top with various sorts of trees, evergreens, &c. On the opposite side of the river lies the city of Hull with its vast piles of sawed lumber. On the northwest, at the bottom of the slope, is the Rideau Canal, Major's Hill Park, and the lower portion of the city; in the distance, peeping from the woods, is the Governor's residence, with the river flowing downward. This river is the scene of much activity in Summer, from the vast quantities of lumber passing by raft and barge to the different markets.

The grounds contain an area of about thirty acres, without its surrounding slopes. About thirty feet from the top of this slope, which is very steep, runs a walk called "the Lovers'," beautifully shaded by trees. At its center is a fountain of water, with seats where the weary may drink and rest. This walk runs all round the back, which is formed somewhat like a D, the straight portion being enclosed by an ornamental walk and railing, in which is the entrance gates from a street of the city.

The grounds may be considered as two flats; on the upper stands the Parliament building and Library; on the lower two blocks of the Departmental Buildings, facing as it were, and forming three sides of a square, apart at the corners about two hundred feet, in the center of which is about six acres of grass. Down the center runs a walk fifty-five feet wide, with two others running from the upper part to the corners; they are fourteen feet wide.

On the upper part of this square stands a parapet wall, straight in the center, but sweeping around and falling at both sides, to the side building. Back of this again, sixty feet at the nearest point, runs two short walls which catch the eye looking from the front, where the front wall begins to fall at both sides, giving an elevated appearance to the building which stands above. Between those walls at each side is a carriage drive and sidewalk, rising to the upper flat with a piece of lawn on each side, in which are ten flower beds, five on each side.

The upper portion on the top of the slope has a cedar hedge (*arbor-vitæ*, Ed.), inside of which runs a foot-walk. On this upper portion is the greatest decoration of flower beds, embracing thirty-six in number; with two large borders, re-

quiring thirty-six thousand plants to fill them, which may be called of three sorts—motto, design in flower, and mass. The first is entirely made of low-growing plants, which I will try to describe. One is at the junction of two sweeping-walks, and forms somewhat of a triangle, in the center of which are the words "God Save our Queen," in *Alternanthera amena*, carpeted with *Sedum*, surrounded by a border of *Alternanthera aurea*. In a sort of fancy scroll work, apart from this, is another of *Pachyphytum aureum*, filled between with *Echeveria Californica*. Next to the grass border is another, running in a line with this border, of *Leucophyllum Brownii*, filled in with various plants, as the second border divides it into sections. Another is a circular bed, twelve feet in diameter; in the center is a circle of *Alternanthera* with four points running to the outer border, and the words "Be true." The center and points are carpeted with *Sedums*. Between those points is another device bordered with Silver Thyme, carpeted with *Oxalis trifolioides*; the outer circle is *Echeveria secunda*. The third has also a circle in the center with the words "Be kind," having eight points. The circle and points are bordered with Golden Feverfew; center carpeted with *Sedum*; points with *Oxalis trifolioides*. Between these points are figures bordered by *Alternanthera*, carpeted with *Sedum*, with an outer border of *Sempervivum*. Much attention is given to bring out contrast by the color of the plants used.

My flower designs are made with flowering plants, which grow as near a uniform height as possible, always taking care that the tallest is in the center. One of the simplest that any one can make is one I had this year. The bed is twenty feet diameter, circular, with four points running out five feet long, and the same where they leave the circle. A *Pandanus* in the center, a circle of *Centaurea gymnocarpa* eight feet diameter; around this plant was filled rose colored *Phlox Drummondii*, then a band of *Phlox* outside the *Centaurea*, Fire Ball three feet, another of *Snow Ball*, then a line of *Teilanthera*; the outer a border of *Cerastium tomentosum*. Following around the points forming an edging those points were filled with *Ageratum John Douglas*. This is what may be called a ribbon bed; but I carry out many designs in flowers, having various ways to keep my lines distinct, which is a necessity for proper effect. My method of doing this I will describe at some other time. For massing I use such as *Petunias*, *Zinnias*, *Portulaca*, &c. All those beds are cut in the grass in Gothic style, corresponding with

the order of the buildings. I always use some distinctive plant in color from the grass. All beds have a border of some sort.

The grounds require a staff of fourteen active men to keep them in order. They are divided according to their different tasks, and soon become very expert. Some trim the beds, which job is done once a week, never allowed to get out of shape, but as it were training them. Others attend to the mowing of the grass. About fifteen acres of this is done by a horse mower, and a hand one to cut corners and slopes where the horse cannot go. Some, again, clip the edges, and sweep the walks; others the watering. Every one has his portion to attend to, and is expected to do it. These lawns are mowed all the summer—at least once a week; in fast growing times twice, and never allowed to show signs of burning for want of water. They are always as green as a spring day morning, even in the month of July. Some of our horticulturists who have visited them say that they are equal to the best of theirs. My method of treating these lawns I will give you afterwards. The task has been a most difficult one, owing to their high, unsheltered position, largely excavated from the rock, and the nature of the soil found on them, all mixed up with the debris from the buildings at their erection—sandstone cuttings and such like.

My facilities for propagation for my beds have been very limited, having only two greenhouses. One, forty by twenty, contains a specimen of most plants of a tropical nature, that I can find worthy of growing. The other is sixty-seven by eighteen, and contains all greenhouse plants that are to be found in catalogues, on this side of the ocean. This lack of glass, although very inconvenient, has had its good results, as it has driven me to try many plans, and I am now able to keep a large stock of plants in a very small space. In public places no one ever stops to enquire whether one has proper facilities to do the work properly or not, but would put him down as incapable if the work be not done right.

Besides this, I use twenty hot-bed lights for the raising of annuals, which are pricked out as soon as ready, into spaces furnished with bottom heat by manure, so that they can be covered up at night for fear of late frosts. From this I get much harder plants than from under the glass, and it enables me to do much with this small quantity of hot-beds.

The grounds have been the admiration of every one during past seasons. To use the common ex-

pression of the many who have seen them—some of whom have traveled through Europe and seen much—it is the prettiest spot they ever put foot upon.

THE AMERICAN BANNER ROSE.

BY PETER HENDERSON.

I see in your Editorial Notes, in the December number of the MONTHLY, page 357, you state that the American Banner Rose, "like all other sports of this character, is liable to take self color at times." This I think is a mistake. I have grown it largely for the past three years, and have never yet failed to see a flower come striped. In fact it is not only the flower that differs from the plant from which it is sported—Bon Silene—but the foliage is entirely distinct, and has no resemblance whatever to any other rose, being peculiarly veined and of a leather-like texture, showing its whole character to be unique and distinct—distinct enough almost to be classed as a species. The rose has been grown largely by the Dingee & Conard Co., of West Grove, Pa., and by C. A. Reeser, of Springfield, Ohio, and as far as I can ascertain their experience has been the same as my own; that no plant has ever run back to the original. Nor do I think it ever will, as its character is seemingly as firmly fixed as if it had been a seedling instead of a sport.

EDITORIAL NOTES.

THE PHILADELPHIA PUBLIC SQUARES.—The filthy condition in which the several little parks or squares with which the city of Philadelphia is studied, has long been a surprise, not to say disgust, to intelligent visitors to this city, and has often been commented on in this magazine. Last year there was some improvement, for which we gave credit to the Commissioners of City Property. This year they were wretched as ever. In regard to these squares the public prints have the following account of the proceedings of the Finance Committee of City Councils, considering the appropriations for 1883:

"The appropriations to the Department of Markets and City Property was next taken up. The total amount asked for was \$179,283, an increase of \$40,321 over the appropriation of this year.

"The items in the bill were approved until that for the improvement of public squares was reached. It amounted to \$70,000, subdivided as follows: Franklin, \$20,000; Logan, \$20,000; Rittenhouse, \$20,000; Jefferson, \$10,000.

"Mr. Wolverton moved to strike out the whole item, saying that the city's finances were not in a condition to stand such an expenditure.

"Mr. Lex seconded the motion, stating that he hoped that the squares could be improved out of the surplus fund this year.

"Gen. Snowden moved to except 'Franklin Square, \$20,000,' from the motion to strike out.

"The motion was agreed to, making the total reduction in the bill of \$50,000."

If these squares could only be kept decent, so that those who believe that cleanliness is next to godliness might have some encouragement, they would not look so very bad, even as they are. Still if they are "improved," they may have to be kept cleaner, and it is a gain that even one a year falls into the line of decorum.

NOTES FROM STAUNTON, VIRGINIA.—By an accident for which we are sorry, the following chapter of good hints has been in the "wrong box," for several months, till recently discovered:

"Thanks for the 'Seasonable Hints' that opened the June issue of the GARDENERS' MONTHLY AND HORTICULTURIST. If you will indulge in a few more such, perhaps the barbarisms that we see on every side may be curtailed. That is, provided people will ever learn.

"'Twas only two weeks ago that I passed some public grounds where the officer in charge was busily engaged in trimming (rather butchering) Coniferae—some of them handsome specimens—from the ground, so as to leave a bare stem of over five feet, and, to add to the beauty of the grounds, was topping—perhaps you would say rounding off—some beautiful English Lindens. At the same time the vineyard, consisting of Catawbas, Concord and Delawares, were being trained on the principle we Southerners adopt for growing the Scuppernon.

"The season here in the Valley of Virginia has been exceptionally cool. At this date, June 5th, the mercury at 50° F. Roses just opening; Coleus, Lantanas, Ageratums, &c., wilting under the cool winds. Have you or any of your correspondents any experience with the Pyrethrum as a destroyer of the cabbage worm? If so, how should it be applied?"

RAPID GROWING STREET TREES.—It is a great mistake to choose the Silver Maple and different Poplars for street trees, merely because they grow fast. In a few years they are objectionable because they are so very large, and have to be removed or hacked down. Such moderate growers as Horse Chestnuts, Norway and Sycamore, or Sugar Maple are much better, even though a trifle

less rapid in growth. Few people complain that they are too large for the streets.

THE SPRING BEAUTY OF CONIFEROUS TREES.—Some one having stated in the *Gardeners' Chronicle* that coniferous trees were monotonous, Mr. D. T. Fish comes to their defence, and says: "Monotony of color indeed! It is all very well to bring this charge against Conifers in the autumn or winter, when their leaves have reached maturity or have begun to enter the sere, if not yellow stage. But not our best deciduous trees can rival the rich interest and variety of Conifers in the springtide. Take for example such a Silver Fir as *P. Pinsapo*; its catkins glow almost with the brilliance of coral, and its grey shoots are soft and rich with verdure that must be seen, as it is beyond description. Then such Spruces as the Smiths and Douglas are of the richest shades. The cones, too, of these and many other trees, such as *Pinus excelsa* and others, add a new feature of interest and beauty. These added to the catkins, the showers of golden pollen, the curious growing points of the wood, soft and apparently as succulent as juicy *Asparagus* at times, also, as in the case notably of *P. Sabini*ana, contrasted with the brown-grey masses of sere and falling leaves, form a combination of light and shade, interest and beauty, that can scarcely be found among deciduous trees. And the odors given out by Conifers are among the sweetest, and perhaps the most wholesome in nature."

Mr. Fish's point is a very good one. The purple male flowers of Table Mountain Pine, and the red or scarlet of the Lawson Cypress are very attractive, while the reddish brown of the new growth of Alcock's Spruce may truly be characterized as gay. There are few flowering plants more beautiful.

THE SACK OR BAG WORM.—The time is coming when that fearful enemy to the Arborvitæ especially will make its appearance. Though we have kept a continual warning against suffering it to eat on, without molestation, it will do good service by again referring to it. The following good sketch is from the pen of Prof. Rathvon in the *Lancaster Farmer*. Hand-picking is the cheapest remedy:

"The spindle-shape cocoons you sent us some weeks ago—evidently taken from an Arborvitæ tree—are the habitacula of a Lepidopterous insect known under the names of 'Sack-worm,' 'Basket-carrier,' 'Drop-worm,' 'Sack-trager,' and other names, but in scientific language it is called *Thyridoptery xephemeriformis*, a name almost 'as long as the moral law.' Perhaps if it knew the space its name occupies in natural history, it would be better mannered than it is. It is notorious as a tree defoliator, especially cone-bearing trees, and

most especially, perhaps, the Arborvitæ. It may have a choice, but it is by no means restricted by that choice, and will attack almost any kind of a tree. We have known it to be abundant on linden, maple, elm, apricot, plum, locust, apple, pear, various species of pine, quince, oaks—in short on nearly all kinds except the peach, and we have heard that it has been known in a 'strait' to attack the peach. Many of the follicles now found on trees are the deserted habitacula of the males of last season, but a goodly number are those of the female pupa filled with eggs, and now before the trees have put forth their leaves, is the time to collect and destroy them. If the season is favorable, between the 1st and 15th of May, the young will be hatched from the eggs that have remained in the sacks or baskets of last summer. If they are left undisturbed until the last of May or the beginning of June, the trees will be in full foliage, and for a month or two the foliage will be too dense to see them. Each female deposits one hundred or more eggs, and these eggs possess the possibilities of the same number of caterpillars. These caterpillars are never nakedly seen, for as soon as the young are excluded from the eggs they begin to form their sacks, and these they carry with them wherever they go, only protruding the head and the three thoracic segments of the anterior part of the body. No liquid or powdered remedy can reach them, nor can birds dislodge them from their habitacula. If these insects are permitted to continue on the trees to their injury, the responsibility must rest with those who own the trees they infest; for we know of no insect that is more accessible, especially during late fall, winter and early spring."

NEW OR RARE PLANTS.

A NEW HAWTHORN—CRATÆGUS BRACHYACANTHA.—In 1832, Drummond collected in the Red River region, a hawthorn which has never been properly made out. Mohr and Sargent also collected imperfect specimens, and recently the fruit has been collected by Letterman. These trees looked at a distance like plum trees, with small blue fruit; the ground under them (August 19, 1882), was covered with fallen leaves.

It is a tree twenty to thirty feet high, in very old trees with rough bark, spines usually about six inches long, curved. Leaves about two inches long, lanceolate oblong, short petioled, leathery, serrate, shining, with ribs almost obliterated. Flowers among the smallest of the genus.

CANNA EHEMANNI.—There are few things more beautiful in American decorative gardening than the various forms of cannas, and good service is done by those who endeavor to improve them. Mr. H. A. Dreer sends us the following account of a new one just introduced:

"The most distinct of all Cannas on account of



Canna Ehemanni.

the large oval usa-Ensete-like soft green leaves

which place it foremost among decorative foliage plants. Its most striking feature is the splendid carmine red flowers produced on flower stems of great length that unfold about twelve flowers to each of the smaller branches. These flowers are very large, and are used to advantage in bouquet-making, or producing splendid effects on the lawn."

AMPELOPSIS JAPONICA.—Under this name the *Gardener's Chronicle* says is being cultivated in Europe our common Poison vine, *Rhus toxicodendron*.

THE DOUBLE ESCHSCHOLTZIA.—Many double flowers do not produce many seeds, but it is said the double form of this pretty Californian annual produces some seeds, which reproduce the double form.

WEIGELA CANDIDA.—This pretty white variety noticed before in our pages in connection with the nursery meeting at Rochester, and which will probably supersede the old *Hortensis nivea*, forms a colored illustration in Ellwanger & Barry's new descriptive catalogue.

GREENHOUSE AND HOUSE GARDENING.

SEASONABLE HINTS.

This is the season when many things will require re-potting. Many have a set time and season to do this; but some things require re-potting at various seasons. The best time is just before they are about to make a new growth. Camelias, azaleas, and many plants, for instance, start at this season. It is not necessary to re-pot so often as some think, especially if bloom, and not very large specimens, is chiefly wanted. If the pot is very full of roots, and the plant growing weak, it may need re-potting.

In potting, see that some provision is made for allowing the water to readily escape, by putting broken crocks over the hole. Use soil rather dry, and ram it firmly about the old ball. Prefer pots only a little larger, to very large shifts, as less liable to accidents. Trim the plants in a little, if un-

shapely, to encourage the new growth where wanted.

Sometimes the plants get "sick," which is known by unhealthy, yellow leaves. This is usually by over-watering, generating a gas, or, as gardeners term it, a "sourness," destructive to the roots. The remedy is to cut the plant back a little, shake out the soil, and put the plant in a small pot with new soil and place the plant in a house only moderately warm, and which is naturally moist, so that the plant can live for a while without requiring much water. It will generally recover.

Many who have but small houses and wish to have a variety, are troubled with valued plants, becoming too large. To keep them low, as soon as the plant has matured its growth, cut it down as low as may be desired. As soon as it shows signs of breaking forth into a new growth, turn it out of the pot; shake or tear away the old ball of

roots and put it into a small pot as it can be got into; and when it grows again, and fills the pot with roots, re-pot again as before.

COMMUNICATIONS.

LARGE COXCOMB.

BY S. W. WEBB, CHARLESTON, S. C.

During the past summer my attention was drawn to some "Celosias" growing in the garden of an amateur in this city. There were only two that grew to any size. The largest measured 30x18 inches. The plants in height were not over two feet and a half, and were never transplanted. During their entire growth they received no attention save the driving of a stake to support the flower. Seeing a description of the Chelsea coxcomb in the MONTHLY, I thought I would write you about this South Carolina one.

CARNATION—JAMES A. GARFIELD.

BY AUGUST D. MYLIUS, DETROIT, MICHIGAN.

The best colored carnation I have at present is President James A. Garfield, a seedling raised by Messrs. Breitmeyer & Sons, of Detroit. The plant is very robust, and proves to be the best for winter blooming of all colored sorts, on account of its sweet scent and very large flowers, it being double the size of other carnations. In every way this carnation is perfect, and I am sure in a short time it will take the place of the kinds now used for winter blooming. In fact there can not be too much said in praise of this carnation. The color is a rich vermillion. This firm raised another good carnation which they named Mrs. Garfield. The color is like a Chinese pink.

HEATING GREENHOUSES WITH STEAM.

BY E. HOLLEY, HUDSON, N. Y.

Having been very much interested in reading the various articles which have appeared in the GARDENERS' MONTHLY during the last year, and wishing more information on the subject, I would now like to ask those who have had experience the following questions:

How many radiating pipes of one inch or two inch size, are required on each side of a hundred foot greenhouse, and twenty feet wide, to easily keep up a night temperature of 65° when the thermometer goes down to 15° below zero? Are two one-inch pipes as good or better than one two-inch

pipe for the purpose of radiating heat? How many horse power boiler is required to heat such a house (100x20 feet)? Can three or four such houses be heated in the same proportion, that is if it requires a five-horse power boiler to heat one house, will it require a twenty horse power to heat four such houses? Is steam heating cheaper than hot water, regardless of the cost of pipes? Does steam heating work as well in an ascending as it does in a descending pipe, or would the condensation of the steam in the pipes cause trouble in keeping up the circulation of steam in the ascending pipe? Can a steam boiler be safely left at ten o'clock at night until seven o'clock in the morning, or is it necessary to watch it more closely than for hot water boilers? What style of boiler would you recommend where economy is an important item. Any one who has had experience in steam heating (for it is experience that we want), that will kindly answer the above questions through the columns of the GARDENERS' MONTHLY, I think will confer a favor on a large number of its readers.

THE MEALY BUG ON COLEUS.

BY WALTER ELDER.

The mealy bug has got among the Coleus family, and done damage the past three years, threatening to drive them out of culture. Propagators, by whose carelessness the bug spreads in this way, will be the first to suffer by the calamity, and it is time to look into it to save their customers from disappointment and themselves from loss. The bug is fond of the heat and moisture of a propagating house, and multiplies fifty times as fast as Coleus plants do. It can easily be destroyed. Make a weak solution of carbolic acid soap and Paris green or sulphur. When the cuttings are prepared for planting, dip them in the solution, all but the lower cut ends. Hold them there for a minute in bunches; then lay them upon their sides and shade them from sunshine and dry air. Let them lie a few hours with the lower cut ends open. They will not lose by evaporation while wet; the end cuts will partially callous, and will not be so apt to rot when planted. After being well rooted, and transplanted singly into small pots, dip them in the solution as before, but not the roots. Cover them wholly for shade, and when partially dry plant them. Once a week after that, syringe them with the solution.

To purchasers, I would say before planting, dip the plants in the solution, spread the fingers over the mouths of the pots, and turn the plants under-

most. Then dip the plants (not the pots); set them in a warm, dark place, or shade them. In two days afterwards set the plants in the beds to grow. To those who do not know the bug and its ways of multiplying, I may say it locates itself at the forks of stems and leaf-stalks, and is very difficult to dislodge. When a white down appears on the plants, it means that there are hundreds of eggs to hatch young bugs. They are almost as minute as are the spores of mildew. Brush off the down with a very small painters' brush, or make a brush of horse hairs to do it. It will then be well to syringe the plants with the solution once a week for awhile. That may not kill the live bugs, but will check their ravages, and may kill all the young breeds from the eggs. Gardeners who have garden frames with glass sashes, may set the plants in them after dipping; then put on sashes and shade the plants one day and night. Keep them there two weeks; dip them again and plant them out; examine every plant carefully. I have not seen the bug upon any of the other ornamental foliage plants.

[Mr. Elder's warning is well-timed, for the mealy bug has undoubtedly shown a growing taste for the Coleus. For hard woody stems the following has recently been recommended by the London *Journal of Horticulture*. It would probably not be so for soft wooded plants, like Coleus, but every good hint in the warfare against insects is a gain: "Common gas tar that was used here, about a fourth of tar to equal quantities of clay and water, one man keeping it well stirred during the time that another man was applying it to the vines, rubbing it well over all the cane, eyes included. We had some Lady Downe's more affected with bug than any others, and were prepared to remove them in spring if they suffered from the treatment we gave them. In their case the tar was used much stronger than the quantity given above, but the dressing had not the slightest ill effect, as the eyes broke as freely as those on the other canes in the same house. We paint all the wires and rafters in the vineries with paraffin oil, as it is no use trying to get rid of mealy bug on vines by cleansing the vines only."—Ed. G. M.]

EDITORIAL NOTES.

LARGE GREENHOUSES.—Mr. Charles Joly, in a paper on the Glasgow Botanical Gardens, notes that the greenhouse at the Crystal Palace, at Sydenham, is 535 metres long; one at the Indus-

trial Palace at Paris, 192; Palm house at Kew, and a house at Laeken, each 120; the new one at Glasgow, 106. A metre is about 3 1-3 feet.

LILIUM HARRISI.—*Lilium longiflorum*, or rather as has been already noted in our columns, *L. eximium Harrisii*, is being introduced with great favor among English floriculturists.

ELECTRIC LIGHT IN PLANT GROWING.—Some time ago the newspapers were full of the wonderful accounts from England that plants could be made to grow all night by using the electric light, and this would be a great aid in forcing fruits and flowers in winter. It was noted at the time in these columns, that plants had been found in America to grow almost as freely by night as by day, and that however valuable in England, we could hope for little advantage from it here. It now appears that it has been tried in France, with no difference between the ordinary growth and that with the light.

FRAGRANCE OF THE GARDENIA.—This once popular flower is likely to be superseded by the double *Tabernæmontana*, which is just as sweet, just as waxy, and in every way as conspicuous, yet produces flowers more freely and more continuously than the *Gardenia*. The foliage also has some resemblance to that of the *Gardenia*.

SOIL FOR FUCHSIAS.—*Gardening Illustrated* says: Fuchsias like a rich soil freely drained consisting of turfy loam, old thoroughly decayed manure or leaf-mould in about equal portions, with a good sprinkling of charcoal dust and sand, and, if at hand, a handful of bone-meal may be added at the last shift. Should they be required to bloom for a long time and continuously, they must be well fed. They are often well grown under vines, the moist atmosphere necessary for their proper development and the partial shade of the vine foliage seeming to benefit them materially; bear in mind, however, that where the vines are closely trained and the foliage becomes dense, the shade will be too much for the fuchsias.

AN INDOOR FRAME.—A lady furnished a detailed account to the *Gardeners' Chronicle* of her contrivance for starting seedlings in early spring in place of a hot-bed, the substance of which is as follows: A stout wooden box was made about twenty inches square and about eighteen inches deep. This was supported on four legs, a hole was made in the bottom and boxed round; then about two inches of cocoa-nut refuse was placed over the bottom of the box, and packed round a common tin baking dish; on this were placed two

or three strips of wood to support a sheet of perforated zinc with a hole in it, through which was let in a common two inch draining pipe in a vertical direction, so as to enable water to be poured into the dish. Over the zinc cover was a layer of broken pottery, and over that a quantity of fine sandy soil, filling up the box to within six inches of the top. An ordinary square garden hand-light, with upright sides and pyramidal top, was put over the whole apparatus, and a lamp was placed under the hole in the bottom of the box. The seeds were sown in small pots, which were sunk in the soil to a greater or less depth, according to the amount of heat which they required. The steam from the hot water passed through the holes in the zinc, and kept the soil moist and warm, raising the temperature at the surface to about 70° Fahrenheit. Of course the water in the baking dish required to be renewed to replace the loss occasioned by evaporation, and a little practice soon taught how often this should be done. As the frequency must depend on the depth of the baking dish, &c., each experimenter must ascertain for himself, by occasionally putting a stick down the draining pipe, and noticing the depth of the water below; for if by carelessness he allows the water to entirely evaporate a hole in the tin will be the result. As the young seedlings grew it became necessary to provide more room for them in a longer box, or one two feet wide and four feet long, not heated with a lamp, but with a special tank to be filled with hot water every twenty-four hours, and with a tap for drawing off the water which had cooled, and a bent pipe at the side for filling it, which, being no higher than the top of the tank, prevented danger of over-filling. It was covered with sliding lights. This box, not being so warm as the other, answered well for receiving seedlings already started.

PRIZE ORCHIDS.—The orchids which obtained the chief premium at the New York Horticultural Society in October were grown by Mr. W. H. Clements, gardener to Mrs. M. J. Morgan, and were: *Odontoglossum Roezlii*, *Cypripedium niveum*, *Cattleya Trianae* delicata, *Oncidium varicosum* Rogersii, *Cattleya labiata* pescatoria and *Cattleya Exoniensis*.

A GOOD ROSE.—Referring to the florists' establishment of Miller & Hunt, of Chicago, Mr. E. Sanders remarks, in the *Prairie Farmer*: "A fine little rose for bedding and cemetery work, pure white and always in flower, dwarf and pretty, called Mille Annie Marie de Montraval (a most unfortunate name, and Frenchy), that we

think is well worth extensive trial. Such kinds as *Niphetos*, *Cornelia Cook*, *Duchess of Edinburgh*, and *Perle des Jardins* (the crack roses of the day) are grown in immense quantities, while the total number catalogued is something like two hundred kinds.

A GOOD LIST OF GREENHOUSE FERNS.—The following is the list of Mr. F. Roenbeck, of Bayonne, N. J., which obtained the first premium at the October exhibition of the New York Horticultural Society: *Adiantum Haysii*, *Adiantum Mundulum*, *Adiantum Aneitense*, *Adiantum Roenbeckii*, *Adiantum Wigancii*, *Adiantum denticulata*, *Adiantum Bausii*, *Adiantum gracillimum*, *Adiantum stellatum* (new seedling), *Adiantum decorum* cuniforme, *Adiantum Farleyense* alcornae. *Gleichenia flabellata*, *Gleichenia dichotoma*, *Gleichenia dicarpa*, *Gleichenia speluncæ*. *Davallia Tyermania*, *Davallia canariensis*, *Davallia canariensisii*, *Davallia alpina*. *Polypodium plumula*, *Nathrodium contaminans*. *Hymenodium crinitum*, *Nephobolus Lingua*, *Nephobolus corimbiform*, *Nephobolus bicolor*, *Thamnopteris Australasica*, *Thamnopteris Nidus*, *Lygodium dichotoma*, *Platycereum grande*, *Platycereum Willenka*, *Platycereum Wollenkii*, *Platycereum majus*. *Aspidium aristata*.

NEW OR RARE PLANTS.

THE DIAMOND TUBEROSE.—Our readers will remember that on the appearance of the "Diamond" tuberose last year, evidence was offered us tending to show that it was the Pearl under a new name. As the introducers withdrew, in order, as it was stated, to "fairly test it another season, before sending it out," it seemed but justice to give them the chance before saying anything more about it. No opportunity has been afforded us to judge of the difference between the two, but we note that the stock has been placed on the French market, while it is denied to our own.

Under these circumstances we feel justified in expressing our belief that the French are going to pay dearly for a "novelty" in the name of the Diamond, which they could get in the shape of Pearl bulbs for perhaps half the price.

ODONTOGLOSSUM VEXILLARIUM.—The increasing taste for orchid culture in America will render the following representation of a very beautiful species particularly acceptable to a great number of our readers, and even those who never saw an orchid house, or an epiphytal orchid growing, will enjoy looking at a picture of that which they would

certainly love to possess. The name *Odontoglossum* is hard to pronounce, but means simply the

cies is the largest, and perhaps the showiest of this very beautiful genus.



Odontoglossum vexillarium.

tooth-tongued orchid. It is one of the most beautiful of the great family of orchids, and this species

It was introduced a few years ago by Mr. Wm. Bull, from Columbia, in South America.

A NEW WATER LILY.—Mr. E. Sturtevant has raised a new variety of lily from *Nymphaea Devoniensis*, which, though not a species, Dr. Asa Gray thinks may be called *N. Sturtevanti*, provided a cross (×) is placed before the name in writing it. According to the description the flower is paler than the original. *N. Devoniensis* was produced from *N. dentata*, which is a white flowering species, *N. Devoniensis* being dark red.

CAMELLIAS AND ROSES.—Since the taste for winter roses grew so wonderfully, the Camellia has been undeservedly left far in the background. There are few more beautiful sights than a well-grown and well-formed Camellia. It is the general impression that there will be a reaction in favor of this beautiful flower before long. The English seem to foresee this, and among the announcements of new plants by Mr. Wm. Bull we note "*Camellia Don Pedro*" has a prominent place. A colored lithograph adorns the December *Florist and Pomologist*.

NEW CHINESE PRIMULA.—The new Primula which Mr. Maries collected for Messrs. Veitch, at Tchang, will probably be useful for hybridizing purposes on account of its distinct habit; no other cultivated Primula that we know of possesses foliage which lies, as it were, flat on the soil. The delicate mauve-tinted flowers with their bifid petals will doubtless become larger, and hence more attractive under cultivation.—*The Garden*.

SCRAPS AND QUERIES.

RAISING FINE SEEDS.—A correspondent from Sarnia, Ontario, writes: "I find a good plan to sow small seeds like Begonia, &c., on a very soft brick, dug out enough to hold say one-quarter of an inch of soil. Place the brick in a pan of water. The brick draws moisture enough to keep the soil in a nice condition. If this is any use, publish it. Have been a subscriber for three years, and am much pleased with your paper."

[This is also a capital way to raise ferns, orchids and other fine seeds. Sown on a shallow brick, set in a pan of water, they will be almost sure to grow, the only care required being to see that the water is always kept in the pan. When done in the usual way, these fine seeds are sure to be washed away by the watering pot, no matter how carefully the watering is tended.—Ed. G. M.]

CHRYSANTHEMUM MAYWOOD.—Mr. James Tap-

lin, Maywood, N. Y., writes: "I have to-day mailed to you flowers of my new single Chrysanthemum Maywood, which received a first-class certificate at a recent meeting of the New York Horticultural Society. I sent with it flowers of the ordinary Marguerite, or Paris Daisy, that the two might be compared."

[These were semi-double, and a great advance in improvement on the original.—Ed. G. M.]

FIR TREE OIL.—Mr. Robertson, of the Government grounds, Ottawa, Canada, writes: "I have also tested the Soluble Fir Tree Oil Insecticide, and think that its merits cannot be too well known. I have used it on the most tender plants, diluted to about half a pint to one gallon of water, and it not only cleanses the plants from insect life, but adds appearance to many foliage plants. I do not wash it off, as I have seen recommended, and as yet have been unable to see any injurious effect from it."

"It must be of great value to those growing house plants, or where greenhouses are attached to a house where smoking cannot be done. I would recommend it to such people. In it they will find a remedy that they have much longed for."

SEEDLING CARNATIONS.—"J. S.," Louisville, Ky., says: "I send you this morning a sample of a Seedling Carnation that I raised two years ago. I have tried it out of doors and in the greenhouse, and find it to bloom better in either situation than any other I know of. It has a very compact habit. The flower spikes get about fourteen inches high. It is a free, robust grower, and is easily cultivated. I have about one hundred strong plants on a bench which are loaded with buds and flowers. There are fully one-half more buds on them than on any Carnations I have seen or raised. What do you think of its shape and color?"

[These appeared to be fine flowers, but being addressed to the publication office in Philadelphia, instead of to the editor in Germantown, they were nearly rotten before they came to hand.—Ed. G. M.]

AIDING THE DRAFT OF FLUES.—Under date of December 18th, a correspondent from Sarnia, Ontario, furnishes the following excellent hint: "About this time many a poor florist will be grumbling if he has smoke flues—how they smoke. Stop it by making a small hole in the chimney, say for seven-inch thimble at the base. Put a few handfulls of shavings in the chimney. Light them: Then start the fire in the furnace, and everything will work like a charm. No smoke and good draft."

Besides this it may be of service to remind the reader of the admirable plan of Mr. Harris, of Philadelphia, as described in our magazine by Mr. Peter Henderson, in which the flues after going the

round of the house, takes its upright position right above the furnace. This is practically a perpetual bunch of burning shavings at the outlet of the flue.

FRUIT AND VEGETABLE GARDENING.

SEASONABLE HINTS.

When fruit trees are grown with root or other crops, it is well known that such root crops will not do without manure. In this operation the trees steal a little intended for the root crops. Hence trees so grown are very likely to have a green, nice color, in strong contrast with neglected trees in grass. It must not be forgotten that trees need as much food as any other crop, and that there is no better way to feed them than by applying at this season on the surface; give them something, if only ditch cleanings. Pruning of fruit trees should be completed as soon as possible, and as a general thing the least pruning the better. In apple or pear trees, strong stout sprouts are apt to come out along the main branches of the tree. These are best cut out, as in time they take to themselves the food destined for the branches beyond, and in this way injure those branches. At other times a branch for some time bearing becomes weakened by some cause, in which case it is often a benefit to cut this off back to a vigorous sprout. This is particularly the case when bark gets what the gardeners call hide-bound. In this case the branches are bettered by slitting the bark longitudinally, or by cutting back to a young sprout as aforesaid.

Some have found injury to the trees from slitting hide-bound bark. The writer practiced it for years on apple and pear trees, and always with excellent results. In pruning dwarf pears cut out the weaker branches where pruning is believed to be at all desirable, even to thinning out the spurs, rather than cut back the strongly vital wood which many do.

The grape is very apt, when trained on trellises, to get its bearing wood weakened. In this case it

is always wise, in pruning, to watch for a chance to get a strong young branch from near the base as a renewal cane.

Manuring of grapes should be regulated by the nature of the soil. If it be damp—in most cases a bad condition for grape growing—stable manure in great quantities means diseased vines. In dry ground, it has a beneficial effect. Many persons of small places have grapes in damp ground, or can have none. They must take care to keep the roots near the surface; never crop the ground about them to destroy the small fibres, if it can be avoided; and even good may often follow, when the vines seem failing, to carefully follow up the roots, lift near the surface, and encourage, as much as possible, those remaining there. Wood-ashes, bone-dust, and such like fertilizers are best for grape vines in low ground.

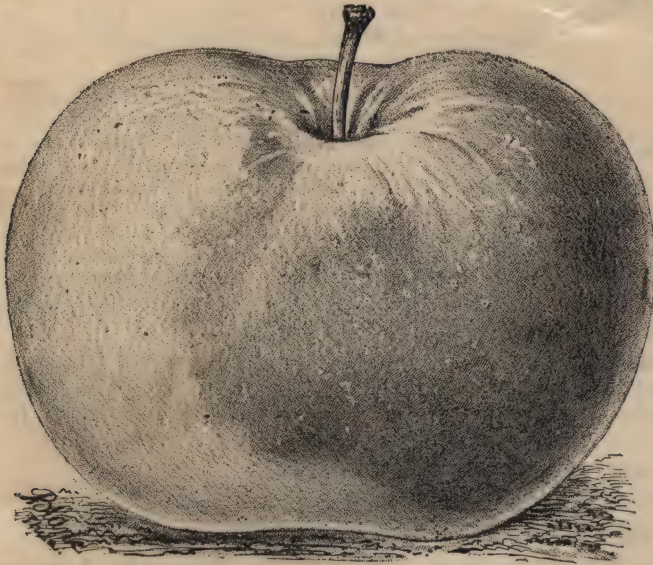
In the vegetable garden the work for February will for the most part consist of preparations for future operations, and particularly for dealing with the manure question. All those kinds that are grown for their leaves or stems, require an abundance of nitrogenous manures; and it is useless to attempt vegetable gardening without it. To this class belong cabbage, lettuce, spinach, &c. The other class which is grown principally for its seeds or pods, as beans, peas, &c., do not require much manure of this character; in fact they are injured by it. It causes too great a growth of stem and leaf, and the earliness—a great aim in vegetable growing—is injuriously affected. Mineral manures, as wood-ashes, bone-dust, etc., are much better for them. For vegetables requiring rich stable manure, it is best that they have it well rotted and decayed. Nothing has yet been found so well fitted for the purpose as old hot-bed dung; though to the smell no trace of “ammonia” remains in it.

COMMUNICATIONS.

THE LORD NELSON APPLE.

BY CHARLES A. GREEN.

While there is no dearth in the varieties of apples now before the public, I have thought there was room for the Lord Nelson, of which the cut given herewith represents an average specimen. Though well known in England, I have never seen it mentioned in any catalogue in this country. It was brought to my notice by my neighbor, whose father, being a man of remarkable fancy for fine fruits



Lord Nelson Apple.

and flowers, brought the scions to this country when he adopted it as his home. Though an early winter apple, I first tested it late in January, and it will keep later. It is growing in an orchard with nearly all of our leading varieties, and is noticeable for abundant yield of good sized, fair, merchantable fruit, peculiarly free from worms and other defects. Charles Downing identifies it with the Lord Nelson of the English books. John J. Thomas says if it is always as good as the specimen he has seen it is worthy of cultivation, its beauty adding much to its value.

Fruit large, oblate, yellowish skin, shaded and streaked with red and russet. Stalk long. Cavity medium. Flesh white, crisp, tender, juicy, somewhat aromatic, mild sub-acid. Quality good to very good. It is an apple that will be prized for eating out of hand or for cooking, and sells well in

market. The tree is a strong grower, and appears to be very hardy.

IMPROVEMENT OF THE PERSIMMON.

BY H. F. HILLENMEYER, LEXINGTON, KY.

I have sent to-day by mail samples of persimmons for your inspection. They are not ripe, and of course not edible, though they will house-ripen, like pears. A ripe persimmon is not suited for shipment, being so tender, and the object of sending these is simply to call your attention to the marked difference in the three samples. The seeds from which all our bearing trees were raised were gathered from a tree in an adjoining county, in the autumn of 1863 or '64. The trees—some two hundred—were permitted to fruit in nursery row, and then such types as pleased us best were saved. Though seedlings from one tree, there were strongly marked differences in size, quality, color and time of ripening.

The sample with bright blush is an early variety, the fruit being nearly gone, having ripened gradually since the last of August. The other sample, of similar shape, is just beginning to ripen, and the green, egg-shaped ones will not be fit to eat before Christmas. The first when ripe is so tender that it must be eaten from the tree, while the third is fully as firm in texture of flesh as an Early Rivers peach.

The persimmon is, I think, one of the neglected native fruits. The samples indicate how readily changes from a type may be obtained, and I think that the same care that has developed so wonderfully the oriental species, would work a like result in ours.

In our next fruiting of seedlings grown from the very best specimens, we hope an improvement in fruit quite as marked as between that of the first seedlings and the fruit of the original tree.

I will also send you shortly some seedless persimmons, in which I feel a great interest. Should this feature prove constant—a fact that we hope to determine next year—I think it will be a great step gained.

Even though we do not improve this fruit further, it still has merits to recommend it. Our trees, in the twelve or fifteen years that they have been

in fruitage, have never failed to yield full crops. At this writing the earlier varieties bare of leaves, but gorgeous in their wealth of fruit—crimson and gold—are as attractive as the most brilliant trees grown for the beauty of their autumn foliage. I do not especially love this fruit myself, but I do enjoy the gusto with which my little ones visit this department of the orchard months after apples can no longer be found, and even after chipmonks have gathered the last stray nut.

[It is a good idea to try to improve the native persimmon. It is likely the original Japan persimmon was no better than our own, while the superior hardness of the American would give it great advantage over its Asiatic ally. Those sent by Mr. Hillenmeyer exhibited a wide range of variation.—Ed. G. M.]

FRUIT NOTES FOR 1882.

BY E. B. GOOD, MANCHESTER, YORK COUNTY, PA.

Keiffer's Hybrid.—Fruited here for the last three years, and a more worthless pear I never tasted. I could never yet ripen one fit to eat. For pickling they answer admirably.

Brighton Grape.—This grape has done perfectly well here thus far, ripens early and keeps a long time on the vine, and the fruit is simply delicious. The bunches should be thinned out to about one-half, as it is liable to overbear.

Lady Washington.—This superb grape fruited here for several years, and to my taste is perfection. The vine is a strong, vigorous grower, and seems to be perfectly hardy. Bunches very large, and when ripened in paper bags, the berries are nearly transparent. If this grape holds out on further trial as it did so far, it will be one of the most valuable grapes we have.

Prentiss.—Fruited here for the first time the past season; a vigorous grower and healthy. Bunches of medium size, very compact. Not of best quality in my estimation, although it may prove a valuable market grape.

Jefferson.—Not fully tested, but the vine is a strong grower and perfectly hardy. Fruit of first quality.

Moore's Early.—This grape has disappointed my expectations. Bunch small; many bunches will set only a few berries, and the fox odor is much more prominent than in the Concord or Worden's. This latter is a much better grape in every particular, though about a week later.

Black Eagle.—For an amateur grape I have great faith in this one.

Duchess.—Not fruited here. Vines very vigorous, healthy and hardy.

Pocklington.—A strong, rampant grower, wood and leaf of Concord type.

EDITORIAL NOTES.

BAD SEEDS.—It is an old story that a bad workman is the first to quarrel with his tools. If a tree does not grow or a seed come up, it is not uncommon to remember that the tree had poor roots, and to feel sure that the seedsman must have given roasted or old seeds. Mr. Thomas Christy, in a recent work on the *Cinchona*, thus gives his experience with different gardeners on the same lot of *Cinchona* seeds. He says:

"There is much more intelligence required in the germination of seed than many people attach to it. For instance, I took some *Cinchona* out of a packet that had arrived and handed it to three men. One lot of seed came up as thick as possible to be, hardly a seed failing to germinate. The second man's pan had a fair sprinkling of young plants, but the third man's pan had no signs of any *Cinchona* plants in it at all. All three men were professional gardeners, and nothing was said to them about the experiment; each did his best."

PHYLLXERA IN FRANCE.—Reports as to whether the French are finding any positive relief from the phylloxera are contradictory. The following extract from a French report partly explains the contradiction:

"In the department of Herault, which produces between a fifth and a sixth of the entire French vintage, thanks to the energetic efforts of its vine-growers, who have had recourse to American vines for the purpose of replacing the vines which have died from the effect of this insect scourge, this department is fast recovering from its first scare, and is rapidly regaining its old position and former confidence. In the Charentes, the great cognac producing districts of France, unhappily, the same is not the case. There the proprietors appear to have resigned themselves to what they have come to regard as inevitable, and cereals are fast taking the place of the vine. On inquiring the reason for this we were informed that of the two most generally accepted remedies for the destruction of the phylloxera, one, that of the employment of insecticides, such as sulphur of carbon and sulpho-carbonate of potassium, has been found too costly; while, owing to the rocky nature of the soil and the small surface of earth, the land is said, on the other hand, not to be suitable for the planting of American vines."

TEXAN PROSPERITY.—The wonderful growth of some Western towns may be fairly rivalled by others in Texas. In 1873, the writer visited Denison, which was then limited to about a score of

newly erected buildings. Now we see by a Texas paper it has a population of 7,000, and is the seat of numerous industries. Of gardening it is said that "within five years the annual revenue from fruits, wine and vegetables, shipped from Denison, will reach at least a half million dollars a year; 125,000 packages of peaches, apples and plums have been shipped this year, besides twenty or thirty thousand quarts of blackberries, sweet and Irish potatoes, and other vegetables in large quantities; 20,000 pounds of grapes have been shipped since May 18. Early in the season, the shipments go North; later, they go to Southern and South-western Texas. A great many melons are also shipped North from Denison. In short, the fruit interests of Denison are simply immense, and it is just now getting fairly started."

Our correspondent, Mr. T. V. Munson, is credited, in the paper from which we quote, with having much to do with this great gardening prosperity.

AUTUMN-BEARING RASPBERRIES.—The literature of fruit culture has become so thoroughly occupied by the market growers, that we are apt to forget that there are other delicious things in the world besides those which have good carrying properties, and that autumn bearing raspberries are among these good things. To grow them well they must be cut down to the ground in spring, and the suckers kept down. They bear from the end of the young wood. We notice that the English magazines regard the Belle de Fontenay, and the Marvel of Four Seasons as different. This is not American experience.

AMERICAN APPLES IN ENGLAND.—The *Garden* says: "The prospects were never more favorable for shipments from America to England than they are this year. The American apple trade, formerly monopolized by Liverpool, has during the last few years (in consequence of direct steam communication), been gradually diverted to London, which market now competes favorably with that of Liverpool."

THE PRIMO STRAWBERRY.—This variety is receiving praise in various quarters for its behavior the past season.

THE WHITE-FRUITED VERSAILLAISE CURRANT.—Under this name a new variety has appeared in France, raised by M. Bertin, of Versailles. It is said to resemble the original in every respect, except that the fruit is a little less acid than that.

THE WASTE BONES OF A LARGE CITY.—At a recent meeting of the Franklin Institute of Phila-

delphia, Baugh & Sons presented the Institute with samples of products from animal bones made at the Delaware River Chemical Works. They stated that Philadelphia produced daily from 80,000 to 100,000 pounds of bones, all of which, by the art of the chemist, are converted into useful materials. Bone oils, ammoniacal liquor, bone black, carbonate, sulphate, nitrate and muriate of ammonia, fertilizers and sizing glues are among the products, samples of which were exhibited.

SUBSTITUTE FOR COTTON.—Mr. Thomas Christy, Fellow of the Linnæan Society, kindly sends us an account of some new commercial drugs and plants, which have achieved some note in England—the account printed on some very beautiful paper prepared from the fibre of the "white fir" (*Abies*), which is probably what is known in this country as the silver fir (*Abies pectinata*). This wood, he says, can be delivered in England, enough to make a ton of pulp, for \$20, while a ton from the famed Esparto grass costs \$80. Cotton costs over \$100 per ton. Cotton machinery will do to spin fibre from fir as well as from flax and other fibres. These are separable into fine film by a new chemical process. We fancy the great difficulty would be in keeping up a cheap supply of fir fibre. It may be cheaper than cotton now, but it takes many years to grow as much fir wood as we could grow cotton in one year, from the same acreage, and this must tend to increase the price to the continuous demand, while cotton is already at its highest price.

DANDELION RUM.—As is generally known the product of fermented sugar is rum. By mixing sugar with chips, old leather, potatoes, parsnips, currants, rhubarb, cabbage, the rum is flavored, and we get as many varieties of "domestic wines" in that way as one can desire. The dandelion is the latest addition to the list of these flavored rums, and is prepared as follows, according to the *London Journal of Horticulture*:

"To make four gallons, pour four gallons of boiling water over the heads of one gallon of dandelion flowers, let it stand till cold, then strain off; add three pounds of loaf sugar with half of the peel of four lemons and four Seville or sweet oranges; boil half an hour the other half of the peel with the oranges and lemons sliced put in at new-milk heat with a little yeast; let it stand three or four days to ferment; then place it in the cask. In a week add half a pint of brandy and stop up the cask. In six months either bottle or draw from the wood, and if it is desired, add a few more dandelions."

LARGE CELERY.—G. D. Moore, of Arlington, Mass., raised a stalk of celery the past autumn,

which weighed seven pounds. It was thirty-eight inches long and twenty-four inches round.

GOOD PEAS.—In a discussion on peas before the Massachusetts Horticultural Society, Mr. Ware said: "Among peas, the American Wonder, which originated in Canada, is rightly named. The vines are very small indeed—there are more peas than vines; it is a sweet, wrinkled variety, and a great acquisition. A succession of green peas is necessary to a perfect table, and this can be obtained, as with corn, by planting a succession of varieties. For the earliest, Mr. Ware recommended Dan O'Rourke, or any of its class, then American Wonder." Mr. Atkinson remarked that there is very little difference in the ripening of Carter's First Crop and the American Wonder peas; the latter is much superior to the former, and he would plant only the latter. After the first planting he would plant only Champion of England. Hon. Marshall P. Wilder had planted ten or fifteen varieties of peas, and found Dan O'Rourke a little the earliest. Breck's Excelsior is a splendid variety—about as early as the Dan O'Rourke. His selection of peas would be the same as Mr. Ware. John B. Moore could not conceive how any one could eat any other than a wrinkled pea. The American Wonder is all that has been claimed for it, and so nearly as early as the Dan O'Rourke that it is not worth while to plant the latter. McLean's Advancer is good. Yorkshire Hero is more satisfactory than Champion of England; it is of equally good quality, a better cropper and not so tall.

THE FAVORITE TOMATO.—This is a new Western introduction, and dares to place itself in comparison with Paragon, Acme and other popular favorites.

THE CABBAGE BUTTERFLY.—A correspondent of *Gardening Illustrated* says: "Wash the cabbages well with strong soot and water, and on the first dry day dust the ground about the cabbages with quicklime, and pick as many of the caterpillars off as you can find; and during the winter gas-lime the land and leave it in ridges to catch the frost, and very few insects will trouble you again. The odors emitted from gas-lime are so pungent that neither moth, butterfly, nor mole will remain on land that is dressed with it."

ORNAMENTAL VEGETABLES.—*Tricolored Celeriac*.—Sentiment seems to be a necessity of existence. That which we eat and that which we admire, can only center in the same individual with violence to human feelings. Yet there are

some who can eat without compunction the horse which has been petted, and Prof. E. D. Cope has recently expressed his disgust that "a foolish prejudice" keeps wretched Arctic explorers from eating one another in order to save a portion of their lives.

However, sentiment goes on, and real lovers of flowers will, we suppose, to the world's end, regret that so much flower garden beauty should be ruthlessly destroyed by a mere white frost.

Little by little, however, we can introduce flowers which after petting and loving for a season, we can turn to and devour, if we follow Prof. Cope's Arctic advice, or the lead of the hippophagi. Cabbages and beets for floral decoration have already been introduced, and now we have a pretty turnip-rooted celery. The Erfurt raiser of it says:

"Amongst the numerous ornamental-foliaged plants, so important for the picturesque character of modern gardens, the above variety has been admired as one of the most beautiful by many customers, who visited my establishment. In general, it resembles the old well-known soup celery, but its vigorous leaves of a dark glossy green are richly and most elegantly streaked with a silver-grey hue in the midst of the leaflets and decorated with a broad creamy-white edging. This arrangement of colors fits that variety admirably for effective groups, the beautiful appearance rendering it a striking contrast to other plants, especially in autumn, when the petioles get a violet-red tint, so that the plant grows a true quadricolor.

"Besides, my Celeriac comes nearly true from seed, giving at least eighty per cent. of variegated plants, and finally it is fit for kitchen-use, particularly for the decoration of dishes and fish-plates."

Improved Cucumbers.—The following extract gives an idea of how these improvements are carefully studied out:

"I received this new frame cucumber from a man who is known as one of the most skillful and successful vegetable growers, and therefore can recommend it confidentially as a very superior improvement. I am told that he was not satisfied with all the introductions of frame cucumbers of the last years, and therefore he busied himself in endeavoring to raise a more profitable variety. He succeeded in a surprising manner by crossing Noa's forcing with Queen of England. It ramifies more than Noa's forcing, and produces twice as much cucumbers, attaining every one a length of two feet and more. The flesh is very firm, extremely delicate, the peel being agreeably green with some clearer stripes. But the greatest value of this new variety is its extraordinary longevity;

it blooms and fructifies from spring till autumn without ceasing, wherefore it was called as above."

In America, where cucumbers are raised by the millions, these little points are not appreciated. Long Island farmers alone grow for the New York market three millions a year.

POISON IN MUSHROOMS.—An article in a late number of the London *Medical Times*, asserts that all mushrooms are more or less poisonous, and that the washings which they usually undergo in cleansing them, and the subsequent cooking, have the effect of removing the poison, but the water in which they are cooked is pronounced "highly poisonous."

It is surprising what an amount of nonsense is started by papers which ought to know better. Mushrooms are rarely washed, but simply peeled, and then cooked. Gardeners when working among mushrooms, often eat them raw—in quantities. No one was ever known to be injured thereby. In stewing mushrooms the water in which they are cooked is used with the vegetables. No one ever died from eating stewed mushrooms.

There are poisonous sorts of mushrooms, but we are writing of the edible kind.

SCRAPS AND QUERIES.

GOOD KEEPING PLUMS.—An Abingdon, Va., correspondent writes, under date of November 25th, 1882: "I send you by mail a small box containing one-half dozen plums. They have been gathered more than a month—picked up on the ground under the tree the 20th of October, and laid away in a paper box. One or two of them had rotted, but I think those I send you are sound. They grew on a tree I grafted two years ago on a stock of a wild plum growing in a clump. I don't think they are fair specimens; have seen the fruit one-third larger. The tree from which I obtained the grafts grows in this country, and as far as I can find is undoubtedly a seedling—an old tree growing on a clump of rocks. They are used by the parties in the neighborhood for preserving and jelly making, and said to be fine for the purpose; good to eat, too, when ripe. I saw the tree once only in fruit, about the middle of October, and there were ripe plums on the ground, and on the tree both ripe and green. The family where they grow say they have picked them up off the ground, under the leaves, at Christmas. I send you some of the leaves also. I call it the Campbell, after the family where it grows. What do you think

of it? Is it worthy of propagation? I had intended to send them when first ripe, so as to show you the true flavor, &c., but neglected until now."

[We find it difficult to decide what to say about these plums. It is certainly very late to have plums. The leaves and wood indicated that the plant belonged to the common American red plum, but the fruit was rather like improved European "sloes."—Ed. G. M.]

SEEDLESS PERSIMMON.—H. F. Hillenmeyer, Lexington, Ky., says: "I send by mail to-day sample of seedless persimmon. The tree is some forty years old, and has always borne such fruit—not one in a hundred having seed. The tree is heavily loaded this season, and the samples are hardly as good as last year. We hope to fruit this variety on our own place next year, and if among other trees, bearing and non-bearing, the peculiarity be preserved, I think it will be quite an advance."

[The common persimmon varies in the number of its seeds in different trees. Sometimes we find four or more, sometimes two only, and in some rare cases none. The matter is of some interest to physiologists, who often wonder whether the fleshy envelopes of fruits can mature in the absence of pollinization. As the seedless persimmon could probably get pollen from other trees, it would perhaps indicate that the flowers were pollinized, but that some latent weakness prevents the ovaries from perfecting, though fertilized. As to the practical worth of a first-class persimmon without seeds, there could be no question. It would rank with the seedless grape, as well as the currant of commerce, which is a small grape without seeds.—Ed. G. M.]

TANGERINE ORANGES.—A Palatka (Fla.) correspondent says: "I send you by this express some extra fine Tangerines, raised by Mr. F. C. Cochran, of this place. The tree is three years old, and bore 260 fruits."

[They weighed five ounces each, were dark red and flattish, and in flavor delightful.—Ed. G. M.]

BOARDMAN'S TREE PAINT.—There are a number of washes that will kill insects on the bark of trees, and otherwise guard the bark of trees from insect attack. It is not always convenient for people to have these ready mixed to hand, and it is therefore an advantage to them to have something safe at once to apply, though it may cost more than simple remedies. Boardman's Tree Paint is well spoken of, though it has not come under our direct observation.

SEEDLING PEARS FROM CALIFORNIA.—We re-

ceived in the fall a box of pears from Mr. A. Broeck, of Santa Clara, most of them russetty, some very large, and all of them of delicious quality. It is, however, extremely difficult to distinguish the exact difference between pears grown in a distant part from those with which we are familiar on our own grounds. We selected two looking like Sheldon and Clairgeau, and sent them without ex-

planation to one of the best "pearists" in our country, who pronounced them first-class specimens of the two varieties already named. It so happens that the grower has those two kinds on his own grounds, and is therefore fully qualified to judge of their difference. We can only congratulate California on these first-class accessions, following on the heels of Mr. Fox's great successes.

FORESTRY.

EDITORIAL NOTES.

SEEDS OR PLANTS FOR STARTING FORESTS.—

Whether it is best to sow seeds in beds, and to transplant for forests, or scatter the seeds on the ground and leave the rest to nature, seems to be one of the valuable questions to come up in the future of American forestry. Though no doubt there will be cases where either one may be better than the other, as a rule plants will be better than seeds. Governor Furnas, of Nebraska, is of this opinion. He was among the first to make tree culture on the prairies a great success.

WOODS AND FORESTS OF SOUTH AUSTRALIA.—

Annual Report of J. Ednie Brown, Conservator of Forests. The expenses during the year, £5,787, and the receipts £5,581, showing that the department has been nearly self-supporting. 189,710 trees were planted, and young saplings in natural growth cared for by clearing brush from around them. At the end of the year, including both classes, 212,560 young trees were living and doing well; 239,336 acres of land reserved for forests, have yet to be planted. The amount of acreage planted is 4,042. The number of trees doing well from the Board's work is 440,000.

An experiment was made to sow seeds broadcast instead of setting out young plants. *Pinus pinea*, *Pinus insignis*, *Eucalyptus globulus*, and *E. calophylla* were employed. The only result is "a few nice plants of the *Eucalyptus* and the *Pinus pinea*," but the failure of the experiment "may have been from unsound seed." It is surprising that such a suggestion should be made, as any one should be able to tell whether the seed was unsound before sowing it. But the "experiment is to be repeated

with the best seed only." The kinds of trees used in timber-planting are chiefly from the many species of *Eucalyptus* or Gum trees. Among European trees, *Pinus halapensis*, *Pinea, maritima*, *Austriaca* and *laricio*, are used to some extent. *Pinus insignis* of California seems to be very largely grown and other Californians being tried on a limited scale. Of a thousand *Catalpas* tested last year, the report speaks highly of its drouth-resisting qualities. Though the driest season ever known, the loss among them was only 5 per cent. The American ash is also growing in favor. A most remarkable commentary on popular names is that white cedar in this report is *Melia Azederach*—the China tree of our Southern States.

FORESTRY LAWS.—We have a circular protesting against a duty on foreign lumber from Mr. M. C. Read, of Hudson, Ohio. In it he says:

"In the Dominion of Canada are millions of acres of land which, from the nature of the soil, must be perpetually devoted to forest growth. They constitute the natural sources of a supply of lumber for the productive arable and pasture lands to the south of them, in the United States as well as in Canada.

"The time is at hand when we shall be wholly dependent upon this source of supply, or upon the artificial growth of timber in our own country, if the present rate of destruction of our forests is continued.

"The increased price of lumber, caused by a tariff upon importations, benefits only the lumbermen. It tends to the development of no other industry. It does not increase by a single foot the amount of lumber we are capable of producing, but, on the contrary, diminishes the amount by tempting the lumbermen to now cut trees which, if spared, would rapidly increase in value, while it imposes a needless burden upon every man in the country

who is not directly interested in the profits of lumbering.

"It imposes a burden upon the people now, and promises a greater burden in the future, when they become wholly dependent upon the foreign supply.

"If the tariff upon lumber is continued, the work of our Forestry Associations will be vain and fruitless; for pecuniary considerations and the immediate money results will control those who own forests which can be converted into salable lumber."

We are not disposed to say much about tariffs in the GARDENERS' MONTHLY, because we wish to eschew everything that bears on partisan politics. People can get all they want of this elsewhere.

But we may say without prejudice to this unpartisan attitude, that we mistake the American Forestry Association, if its work is simply the preservation of old forests. At one hundred years old a forest is ready for the axe. The lumber decreases in value every year the tree stands after that. It is far better for the country that where there is no chance to get a two hundred-year-old forest to market, the wood should be girdled or burnt off, and the land put to agricultural uses. Forestry associations should bend their efforts towards planting new forests instead of merely protecting old ones; and if in this view a duty on lumber should encourage forest planting among us, it may be well worth even a Forestry Association considering how far it would be judicious in the nation to go.

It is now generally conceded that it would be quite proper to "protect" forestry planting, but just what that protection should be, we must leave to the politicians.

DUTIES ON MAHOGANY AND ROSEWOOD.—A Canadian correspondent sends the following: "Can anything be less in accord with the spirit of the age, which is supposed to favor the reduction of taxes as much as possible on articles affecting the poorer classes, while collecting duties on more expensive articles of luxury? On examining the lumber tariff I find that exactly the contrary rule obtains, for the same duty is imposed upon spruce and the inferior qualities of pine, costing at the mills from six to eight dollars, as upon the clear and finer qualities, costing five times as much, while mahogany, rosewood and satinwood, costing hundreds of dollars per thousand, are admitted duty free. This is the country for the poor man; for the lumber to provide shelter for his family he must pay from twenty-five to thirty per cent. duty, while the rich man can finish off his mansion or palace in mahogany or rosewood duty free!"

As far as the mere politics involved in "duties on lumber" are concerned, we must leave that to other papers. We will only say that in this part of the world the poorest people buy articles made of mahogany and rosewood—as much, perhaps, in proportion to their incomes as rich people do, and the rich man buys as largely of pine and spruce, in proportion, as the poor man does. We fancy the duty has no reference to the wants of rich or poor, but has reference to the encouragement of the home production of timber. The reason why mahogany and rosewood are duty free, is probably that no amount of "protection" would lead to their culture in the United States.

Perhaps a duty on foreign lumber leads to a more rapid consumption of native trees than is immediately desirable, but if it lead to planting of new forests, it will do no harm in the end.

SPARK ARRESTORS.—The intimate connection which sparks from locomotives have with forest fires renders every attempt at improvement of interest to the forester. We recently noted the praiseworthy efforts of a Boston railroad in this direction. We now have to record that at a recent meeting of the Franklin Institute of Philadelphia, a paper was read, describing Rufus Hill's spark arrestor for locomotives, which has been put upon 213 locomotives built at the Baldwin locomotive shops, and has been found to work well. Mr. Hill is master mechanic of the Camden and Atlantic Railroad, a road always foremost in endeavoring to meet popular demands for railroad comfort and convenience.

HABITS OF THE ASPEN.—Mr. Douglas notes the curious and very interesting fact that in the Rocky Mountains the aspen only seems to make one in forest succession after the forest fire has been over the ground. The following from the *Gardeners' Chronicle* also has a similar bearing on this point:

"The aspen trembles all through Europe. It may have commenced its curious habit in the Caucasian range, where it is still a prominent tree, but historically it has always been dispersed over Turkey and Russia as far as the Frozen Ocean, and there is nowhere such a trembling of aspen leaves as in the woods around Moscow, where innumerable seedlings sprang up after the conflagration of 1813. The aspen is found in the bogs of Denmark at all depths, while the alder, birch and hazel do not occur below the oak level. Like the Scotch fir, therefore, it is one of the primæval trees of Europe. It is also a native of the woods of Invercauld, near Braemar, where it ascends to a height of 1,600 feet. It travels into Sutherlandshire, loves moist situations and woods, overhanging the Highland lochs. The margin of Loch Katrine and the

islet of the 'Lady of the Lake' are its favorite sites."

OSAGE ORANGE FOR SILK WORMS.—Col. M. B. Hillyard, who, perhaps, more than any living man has devotedly given time and money in building up Southern industries, says: "But I warn every one against hoping for any success in a business point of view, in the use of the osage orange. The difficulty in securing sufficient leaves, by reason of

thorns; the dangers of the succulent leaf, at the late stages of the silkworm, aside from any mooted points on this food, ought to prevent any one using the osage orange, except to learn on. The food answers for a year as food, while you learn silk culture, and until your mulberry trees can be used; but I think the great authorities will agree that, except as a diversion, silk culture on osage orange will prove a failure."

NATURAL HISTORY AND SCIENCE.

COMMUNICATIONS.

CROSS-BREEDING WHEAT.

BY MR. E. CARMAN, NEW YORK CITY.

Mr. Veitch, replying to my remarks regarding the cross-breeding of wheat, says that "the cause of failure is owing to the fact that wheat is cleistogamous," and that necessarily fertilization takes place while yet the flowers are within the folds of the sheaths. There was no failure in the first place, and in the second if there had been it would not necessarily have been due to the fact of the flowers being cleistogamous. A sharp-pointed stick serves to part the paleas and glumes, thus revealing the pistils and stamens. If then the anthers be removed, while yet immature, and pollen be introduced from other varieties of wheat, any seeds that form must be cross-bred.

The peculiarity I noted in the remarks to which Mr. Veitch refers, was that so many of our cross-bred seeds should so closely resemble the mother parent. I have crossed no less than 2,000 flowers of wheat, and we have now growing thirty kinds, which are different from either parent. All the rest have been rejected because they could not be determined from the mother variety.

It is very plain to those who have tried to cross wheats that they cannot cross through natural agencies—wind or insects. But it is just as plain that a cross can be easily effected by carefully spreading apart the sheaths, removing the green anthers and inserting other anthers when ripe (or gathered pollen), when the stigmas are receptive.

EDITORIAL NOTES.

SPIRAL GROWTH.—Vegetation, as is well known, grows in a spiral direction. Speaking of animals, and in relation to the development of different forms, in a recent lecture in the hall of the Academy of Natural Sciences of Philadelphia, Miss Grace Anna Lewis remarked: "There is also a tendency to ascend in a spiral, arising from the conflict of these two forces, so that we find why animals rise in grade from lower to higher, and why they must continue to do so as long as the animal world is in existence. There also appears to be a balance of forces between the different branches, one presenting clusters different but complementary to the others. Thus, on the whole, the animal kingdom appears to arise by systems or pairs of branches, by what is termed a method of bichotomus branching."

EVAPORATION FROM DEAD BRANCHES.—The *New York Tribune* is reported as giving its readers "the novel discovery of Professor Bessey, who has demonstrated that the evaporation from a moist piece of dead wood was exactly like that from a living leaf. Now, when a dead branch is large enough to keep continually moist in the interior, it will in dry air constantly lose water by evaporation from its surface. This water so lost is taken from the tree, and must have been supplied directly or indirectly by the living portions. Moreover, it must be remembered that a living branch is well protected against loss of water through evaporation, by the epidermis which covers all its surface when young, or the impervious corky bark which

is always found on it when older. When a branch dies, these protecting devices soon fall into decay, and the water, so carefully guarded by the living parts of the plant, is wasted by evaporation."

If the *Tribune* had read the GARDENERS' MONTHLY, it might have given that news to its readers long, long ago.

DOUBLE TROPÆOLUM, HERMINE GROSSHOFF.—Mr. Henry A. Dreer sends us specimens of a new double Tropæolum of which we give the following illustration. The old double "Nasturtium" or Tropæolum, was of a light red color; this is bordering on the crimson. Besides its great value as an ornamental plant, it is one of those interesting variations from a normal type which lovers of natural history love to study. As every one knows the



Double Tropæolum Hermine Groshoff.

common "Nasturtium" has a long spur projecting from the calyx. The scarlet or zonale geranium is very nearly a Tropæolum, and has a spur like it, but it is united with the flower stalk, and can only be well detected by cutting the stalk across. In the case of this Tropæolum the spur has disappeared with the doubling of the flower. The same thing occurs in the doubling of Aquilegias or Columbinas.

DEFENCE IN BIRDS' NESTS.—"T., Wilmington, Delaware, says: "Noticing your remarks on the nest of the wood pewee, I would ask if you have seen that of the great green-crested fly-catcher? The former decorates with lichens, the latter inva-

riably with a snake's skin. I have seen hundreds of the nests, and have never seen one without the snake's skin. The lichens serve to conceal the nest of the pewee, as they do that of the humming-bird, which always uses them and conceals its nest effectually, but why does the fly-catcher use the snake-skin? Is it to terrify robber birds? It builds in a hole in a tree, often not far from the ground. The skin is woven in around the margin of the nest, and is made very conspicuous."

AMERICAN HABITS OF EARTH-WORMS.—At a recent meeting of the Academy of Natural Sciences of Philadelphia, Mr. Meehan commented upon a collection of leaves inserted by earth-worms in their burrows in the manner described by Darwin, who, it will be remembered, states that such leaves are drawn in by the worms either by the apex or petiole, as may present the least resistance. The collection had been made by Mr. Edward Potts, from his own grounds, and consisted of willow leaves, although peach leaves were sometimes employed in the same way. These leaves being lanceolate, or as much tapering at the one end as the other, were inserted indifferently at the petiole or at the apex. It was supposed that their use is to line the burrows, and thus protect the worms from the cold and moisture of the earth, although portions of the leaves are evidently softened by the secretions of the worms and used as food. A willow leaf will be drawn entirely into a burrow in the course of three days. The habits of earth worms as illustrated by the specimens exhibited were commented on by Messrs. Heilprin, Potts and Leidy.

XERANTHEMUM ANNUM SUPERBISSIMUM.—Referring to Acroclinium in our last, it was noted that in a composite or aster-like flower, there were many methods by which the flower became, in popular language, "double." We give here a case where another of the "immortelles" has become double,



Xeranthemum annuum superbissimum.

but in this case by the tubular florets in the center, taking on a broadly ovate form, as in some dahlias. Besides the instructive lesson it affords, it is a

highly ornamental plant, and is pronounced by Haage & Schmidt, the Erfurt seedsmen, as the best of all the *Xeranthemums*."

HANDSOME BIRDS' NESTS.—A correspondent suggests that the wood pewee covers its nest with lichens to disguise it—to make it look like a dead branch—that its enemies may be deceived, and not that it has any love for beauty.

PINE FROM THE ARCTIC REGION.—Among the interesting souvenirs of the De Long Arctic Expedition, are some pine cones, which do not seem to be of the known American species. They have been placed in the hands of Mr. Josiah Hoopes, author of the *Book of Evergreens*, for determination.

FORMIC ACID AND HONEY.—Honey, according to A. Vogel, says the *Scientific American*, contains on an average one per cent. of formic acid. Observing that crude honey keeps better than that which has been clarified, E. Mylius has tried the addition of formic acid, and found that it prevents fermentation without impairing the flavor of the honey.

CITY SMOKE.—Smoke will soon be at a premium. From 2,800,000 cubic feet of smoke given out by say 1,000 cords of wood, 12,000 pounds of acetate of lime, 200 gallons of alcohol, and 25 pounds of tar may be obtained.

VARIATION IN COTTON PLANTS.—A writer in the *Dixie Farmer*, says there is as much trouble in keeping a breed of cotton pure, as a breed of corn or melons. There is a constant tendency to vary from the type. He believes it to be caused by the visits of insects.

WET WEATHER AND THE GROWTH OF TREES.—It is said that some scientific society has instituted a series of experiments to find out in the far away past which were the wet and which were the dry seasons, by having examined the thickness of annual growths of wood in old trunks. It is surprising that any intelligent body in these days should not know better than this. Wood is not plastered over the old series, as a painter would put one coat on the coat which had gone before, but is an act of vital power proceeding from the cells of wood of the preceding year or season's growth. The amount of wood deposited depends very much on the food to be had in the vicinity of the little cells which have to make the new mass. If, say, at ten feet from the ground, there be a little branch with leaves having a chance to make food, the annual ring of wood will be thicker just below than at two or three feet lower down. In fact if we cut a trunk

across at half a dozen places, and take any one side of the trunk for examination, we shall find the "annual ring" of any one year varying in thickness. One section would tell us it rained that year like a deluge, while another section of the same tree would tell us that particular year was the driest on record. However, if this is not sufficient, it may be as well to add that Sir Herbert Christison, the great Scotch chemist, has made some curious observations on the effects of a cold wet season in diminishing the normal growth of trees. He found on careful measurement that, comparing 1879 with 1878, eleven deciduous trees—not oaks—made on an average 41 per cent. less growth in last year than in the year before. Of seventeen pine trees, the average deficiency was 20 per cent., so that heat appears to have more to do with the making of wood than moisture has. It is strange that the growth of the oak, which drops its leaves, seems less dependent on heat than that of the pine, which we usually associate with very cold regions.

ABSORPTION OF WATER BY ROOTS.—Prof. Goodall in a recent lecture, says: "Aquatic plants absorb water through the surface of all submerged parts. Plants fixed in the soil absorb water through the superficial tissues of the youngest roots; and chiefly through root-hairs. Leaves of such plants absorb no moisture, even when wet by rain. When a plant is torn roughly from the soil, nearly all these root-hairs (which are delicate, elongated cells, thickly clothing a short portion of the youngest roots just behind the root tip), are left behind, and the power of the plant to absorb water is ended. The idea that the tip or spongiole absorbs water has been exploded by experiments, as also the idea that when these root-hairs, or the portions of the root which bear them, are torn off, water is absorbed by the wounded part. The whole work (except in the case of coniferous trees, which have no root-hairs, and absorb water by the newer parts of the root, but never by the tip) of forcing water into the plant, against a pressure of 3 to 5 atmospheres, is done by these minute and delicate root-hairs.

HELIOtropISM IN SUN-FLOWERS.—Mr. Thomas Meehan exhibited flowers of *Helianthus mollis*, and remarked on the popular fallacy of sun-flowers turning with the sun. The original "sun-flower" connected with the Ovidian stories of Clytie and Phœbus, was the European *Heliotrope*, and even that did not turn with the sun in the modern popular sense. It simply grew where the sun loved to shine, and the plant did not flower till the

sun had reached its summer solstice. The mythological story is founded on the fact that the plant continued to open its flowers as the sun declined, or, as Ovid might say, its affection for its beloved was in proportion as the lover fled from her to his winter quarters. The *Helianthus* was named sun-flower simply because the flowers resembled the sun, and there is no relation between it and the sun-flower of mythology.

Yet there are peculiarities worth noting. Travelers across the American plains, where sun-flowers abound, have often observed a great proportion of flowers facing one direction, but there were always some in others, and these exceptions seemed to prevent any generalizations as to special points of the compass being favored more than others.

He has growing in his garden plants of *Helianthus mollis*, from seeds gathered by him some years ago from near Odin, in Illinois, and the flowers always seemed to have, to a great extent, a general southern leaning, but until this season he had not thought to make exact figures early enough to be satisfactory. This season he found the first flowers open on the 7th of August. The upper portion of the flower stalk is curved, so that when the flower opens some quarter of an inch of stem is at right angles with the lower portion, and the face of the flower is exactly horizontal. It was subsequently found that the flower remained in this horizontal position till the last disk-floret had expanded, occupying about three days, when the whole head commenced to take an erect position, taking about three days more to fully accomplish. Commencing to open on the 7th of August, by the 11th there were sixty-eight flowers expanded, all facing exactly southeast on opening, but on the evening of this day three were found which had changed round to northeast, with a slight tendency up from the horizon. On the 14th there were seventy-three flowers open, twenty-one of which faced northeast. On examining the matter carefully the inclination to the north was found to be due to a slight spiral or uncoiling growth during the advance from the horizontal rest to the erect position. All do not do this, but uncurve rather than uncoil. While this accounted for the northward advance, often as much as ninety degrees in so many flowers, it still left the reason for the original facing of the flower to the southeast among the many problems of plant life yet to be solved.

He referred to the several reasons offered in explanation of polarity in the leaves of the compass plant, pointing out the unsatisfactory character of all of them.

CROSSED ASPARAGUS.—We see it stated that the *GARDENERS' MONTHLY* is opposed to the idea that asparagus can be crossed. Nothing is further from the fact. The *GARDENERS' MONTHLY* was really the first to show, even many years ago, that the asparagus had separate sexes, and that it really could not seed at all unless crossed; that is to say, that one plant must have the pollen from another plant in order to produce seed. The position of the *GARDENERS' MONTHLY* simply is that there cannot be any special variety, such as some named plants have been sent out. But there is no reason why there may not be an improved race. If, for instance, a female plant which is a strong grower and delicious eating, is fertilized by a poor wiry plant, the progeny may be expected to be inferior. If fertilized by one as good itself, the progeny would be superior. There can be no question about which seed would produce the best results. The plants would not be uniform, but there would be a general superiority. There can be no special variety of asparagus, but there can and there ought to be great care in the selection and isolation of plants intended for seed, if one wishes to keep at the top of the heap with first-class asparagus.

OIL FROM PINE.—An important industry, according to *La Nature*, has sprung up within the last few years in the French department of Landes. It consists in extraction and applications of oils from pine. These oils are of two sorts, the heavy (pinoleum), obtained by distilling the resinous wood at a low temperature, and used for painting and wood-preserving; and the light oil for illumination, got by distilling in special apparatus, and purified with chemical agents. This light oil has the same chemical composition as oil of turpentine ($C_{20}H_{16}$), and distils at the same temperature (150° to 160°), but has the advantage of not resinifying. It contains neither pinic nor sylvic acid. As it does not emit vapors except at a high temperature, its use for lighting purposes is quite safe. Its luminous intensity is greater than that of petroleum; it contains 88 per cent. of carbon, while petroleum has 82 per cent. Two similar burners showed the pine oil to have an advantage of 33 per cent. in luminous intensity; the consumption was also less. In the department of Landes roots and old stumps of pine, formerly unutilized, are now made to render considerable quantities of oil.

FERTILIZATION OF FLOWERS BY INSECT AGENCY.—Nehemiah Grew, in 1682, first suggested fertilization as the use of pollen by flowers. Cam-

erarius in 1694, and Vaillant in 1717, completed Grew's observations, but the doctrine was not universally admitted till 1729, when Linnæus published his excellent treatise "*De Nuptiis et Sexu Plantarum et Sponsalia Plantarum*." Kolreuter, 1761, was the first to suggest cross-fertilization, through the agency of wind or of insects. Sprengel, in 1793, submitted that the fertilization of a hermaphrodite flower by its own pollen was the exception. Andrew Knight, 1799, advocated that a plant would not continue fertile by its own pollen through many generations. Robert Brown confirmed many of these views by observations on Asclepiadaceæ and Orchidaceæ. In 1862, Darwin issued his work on the "*Fertilization of Orchids*," and the evidence he offered has been confirmed by the observations of Hildebrand, Axell, Delpino, Muller, Lubbock, Slade, &c. Since then Hæckel and others have believed that the views of the others claim more for the relations between color and insects, than the facts warrant, but the subsequent observations of M. Musset seem to indicate that Hæckel's views are unsound.—*Abridged from Revue de l'Horticulture Belge*.

HONEY DEW.—We give place to the following from a correspondent of the *London Garden*, in order to call attention to a question we regard as by no means settled:

"Bee-keepers will rejoice greatly at what they regard as honey-dew, the deposit of which is very heavy this year, as aphids are more than usually prevalent, the undersides of the leaves of limes, sycamores, cherries, and most other trees, being quite covered with them, and, as a natural consequence, the foliage below is heavily coated with their excreta, which they exude in such quantity as to form a glutinous paste, and varnish the leaves quite over. Many look on this so-called honey-dew as a sort of distilled sweetness brought about by atmospheric influence, and never dream of aphids, or think it is the discharge from any insect, else they would not be found, as I have seen them, licking the nectar off, and appearing to enjoy it, till they knew from what source it came, when they soon showed disgust, and a violent fit of expectorating seized them. Hop-growers, and those connected with gardening, know only too well what honey-dew means, and when they see it are well aware that the enemy is at work sucking the vital energies out of the plants, and crippling their growth. What is wanted now is a good down-pour of rain to wash the foliage, and cleanse it of both parasites and honey-dew; for though the latter may be good for the bees, and go far towards assisting them to fill their hives with honey, it stops the pores of the leaves, and prevents free respiration, and thus interferes with their health."

Now many of us have seen honeyed liquid excreted from aphides, and are therefore quite ready

to agree with the notion of the animal origin of honey-dew as generally accepted.

But the writer is quite sure he has seen numbers of cases where trees have swarmed with aphides without any honeyed surface to the leaves below them, and on the other hand some few cases, especially on the linden, where no trace of any aphides existed. Only last season he saw the whole brick pavement beneath the shade of two American plane trees in front of the Wills Hospital in Philadelphia, covered with stains from drops of liquid which had fallen from the trees. Myriads of flies were feasting on the sweetness wasted there. So far as the eye could tell at that distance from the ground, no aphides were visible. By the aid of a sun umbrella handle, some of the lower leaves were gathered, but there were neither aphides beneath or any appearance of varnish on the upper surface of these shaded leaves. Across the street were other plane trees, the branches almost reaching those on the other side, but no sweet liquid was under these as in the other case. It is inconceivable that trees so near together should swarm with aphides in one case, and have none in the other. These street trees were left with regret that they were not growing nearer where some close attention might be given towards unraveling the mystery. It seems, however, inconceivable that even though aphides should have been in extraordinary numbers on the tops of these trees, they should be able to excrete enough honey, not only to cover the myriads of leaves with a gloss below them, but have still some to spare to splash the brick sidewalk as with a hose. Though we have to give some sort of an assent to the aphid origin of honey-dew, we cannot help feeling there is something back of it all not yet explained.—Ed. G. M.

THE LACQUER TREE OF JAPAN.—The precise tree which produces the gum used to make the peculiar lacquer work of Japan, is now ascertained to be from the *Stagmaria verniciflua*, a tree genus closely allied to the *Rhus* or poison vine family. There are vast plantations of the tree in Japan. Each tree is tapped, and during four months juice enough to fill a three-ounce bottle exudes. One thousand trees yield about 12,000 gallons. It is said that the exact manner of its preparation has not yet been discovered by Europeans.

MIGRATIONS OF BIRDS.—An Illinois friend says: "I take great interest in everything touching the habits of small birds. I have no doubt the food question has much to do with their migrations. The robins left us very early last fall, owing to the fruit and late berry crop being a failure."

LITERATURE, TRAVELS AND PERSONAL NOTES.

COMMUNICATIONS.

NOTICE OF THE LATE JAMES HAGGERTY, OF POUGHKEEPSIE.

BY V. B.

Sunday afternoon, December 17th, 1882, James Haggerty, the celebrated rose grower and florist of Poughkeepsie, New York, departed this life. Fifteen years ago he began to complain, and during that whole time he did not enjoy many well days. He was mostly always troubled with dumb ague, supposed to be malaria, but this last year he suffered severely from a bronchial disease. A trip across the ocean helped him somewhat, but after he came home it was the same thing over again. A visit to the famous Catskills last summer, and the pure air of the Adirondacks, failed to restore his health, and death pursued his victim until he relieved him on the above mentioned day from all earthly troubles.

The funeral took place at eleven o'clock on Wednesday morning next. It was largely attended. Florists and friends from all parts came to pay their last tributes to the deceased. An eloquent funeral sermon was delivered by the Rev. Dr. Hear. A black pall covered the casket. Large silver handles hung from the sides. A plate with name and age (51 years), together with some beautifully arranged designs in choicest flowers, covered the top. While waiting for the services to take place we took a run through the establishment which the deceased had erected with such ingenuity, conducted with such prudence, and diligently attended to at all times. A side hill with a number of terraces, one above the other, about 10 feet wide and 200 feet long, is planted with all leading varieties of the best roses, most successfully grown and literally covered with buds. Nothing less than an acre of ground is covered with one glass roof, and by the pillars supporting the roof.

Maréchal Niel and other best running roses are trailing from pillar to pillar, and large numbers of this queen of flowers are cut daily. Bougainvillea, with their charming blooms, Bignonia venusta, with large bunches of golden trumpets, change off with the running roses, and are loaded with flowers.

The sides are planted with bouvardias and smilax in beautiful festoons. Four large houses, over 100 feet long each, are planted with Gen. Jacqueminot roses and look very promising. One house with Pearl des Jardins roses, healthy and productive. Two houses with carnations, full of flowers, and one with violets, &c.

These are the principal buildings. It looks as if it would cost a fortune to run this concern; but it has so far paid expenses, and by proper engineering thousands of roses and other flowers have been cut and sold daily and resulted in large profits. By his works, as a self-made man, the deceased created for himself a monument which will be remembered as long as Poughkeepsie's history.

Trusting that the widow, three boys and two girls, prove themselves worthy of this famous property, which stands superior to anything of the kind in the State, if not indeed in the United States, we close these few well merited remarks regarding a dear friend whom we esteemed very highly.

"Requiescat in pace."

UNDER THE HAWTHORNS—No. II.

BY WM. T. HARDING, MOUNT HOLLY, N. J.

It is doubtful if any writer of prose or poetry ever had the graphic power to vivify rural scenery with a reality so true to nature as had the gifted Burns, and his happiest efforts are often manifested when delineating the wild and picturesque scenes so peculiar to the romantic features of Caledonia. His ardent admiration for trees and flowers is often expressed with a fervor akin to adoration; and the "milk-white hawthorn bush" seems especially to have been one of his arboreal favorites. And with a descriptive eloquence unsurpassed, how exquisitely in poetic metaphor he pictures an old hawthorn, as it appeared to his vivid imagination in the gray dawn of the early morning, and charmingly invests it with an interest bordering on veneration. As an instance of his felicity of expression, I quote his sentimental allusion to the hawthorn, in the idiom of Bonnie Scotland—

"The hawthorn I will pu', wi' its locks o' siller gray,
When like an aged man it stands at break o' day."

His comparison of an ancient thorn, drooping like an old man with the weight of years, is an apt one. And whoever has looked upon one, after the manner of the poet, will readily recognize in the imagery the bending form of a gray-haired sire, and possibly the ideal of "John Anderson, my Jo, John," whose "locks are like the snow."

It occurred to the writer when examining some very old hawthorns while in England, in 1881, how much several of them bore a resemblance to Burns' figurative tree.

It was on a blithe May morning, "when nature painted all things gay," I quietly meandered along a well-worn foot-path, by the side of hedgerows flecked with pretty flowers, and which in irregular lines divided the green meadows, to a spot where I had, when a little urchin attending school, spent many a happy hour. The same old hawthorns I had in boyish eagerness often climbed up to gather the red ripe haws from, were still growing there, and to all appearance as vigorous as they were more than fifty years ago. The destructive fingers of time seemed to have touched them gently, and during the long interval which has elapsed since I last saw them, their familiar features had scarcely changed. And yet, while remaining the same old trees I knew in days gone by, there was undoubtedly an increase in the circumference of their deep furrowed trunks, the largest of which measured more than eight feet in girth. On this occasion the heads of these venerable old thorns were each beautifully covered with its annual crown of white blossoms, so fragrant and fair. And as I viewed their well-remembered forms, the floodgates of memory seemed to open and pour out the pent-up recollections of the many strange mutations of the past. To secure a souvenir seemed as natural as the suggestive language of Burns was to prompt my desire "to pu' its locks of siller gray," which I devotedly did, to keep in remembrance.

The verdant fields were prettily bespangled with a variety of spring flowers, from which I brushed the morning's dew, as I leisurely left the old haunts of my youthful days. Continuing my pleasant peregrinations, I soon reached Dunstall Park, to view the handsome groups of the various species of hawthorn for which it is famous.

In this paper I shall omit mentioning the usual variety of interesting large-sized old forest trees, and splendid collections of ornamental low trees and shrubs, or beautiful landscape effects usually found in such like places, and confine my remarks to the very comely kinds of *Crataegus oxyacantha*,

or poet's hawthorn, which pleased me most of all. And methought, as I looked around, how gratified must be the owner of such exquisite scenes, "where every prospect pleases."

Near by where I stood were several thrifty handsome common English hawthorns, which have been the subject of many a sentimental theme by both ancient and modern writers, with whom it always seems to have been a favorite. A little distance off grew some excellent specimens of *C. o. alba plena*, or double white thorns, and pure and pretty indeed are its superb companions, *C. o. rubra plena*, or double scarlet, with its single sister, the well-known *C. o. coccinea*, or common scarlet thorn, which is an old and much admired little tree; while another member, of this interesting family is *C. o. rosea*, whose rosy blush is not so high colored as the two preceding kinds, and of which the planter had made liberal use in the extensive park around. Another red variety of striking appearance, known as *C. o. rubra splendens*—well named, and of vigorous growth—made pretty clusters here and there, while near by the margin of an ornamental lake, standing singly, was a bush of the very distinct *C. o. Douglasii*. Its peculiar though pleasing habit will always secure it a place where only a few kinds are grown. Its handsome foliage and great profusion of flowers and fruit enhance its value.

Among these most effective park or lawn ornaments, I noticed *C. o. filicifolia*, or fern-leaved thorn, a very curious kind; and *C. o. variegata*, which specially commends itself in either of its three interesting phases of foliage, flowers and fruit. *C. o. rotundifolia*, a round-leaved kind, formed very pretty objects, as did the more robust *C. o. grandiflora*, with flowers grand enough for either bridal wreaths or May coronal. *C. o. tanaetifolia*, the tansy-leaved kind, was one of the many remarkable varieties around me. And forming agreeable contrasts with their interesting companions, was a fine specimen of *C. o. platyphylla*, with its handsome broad leaves, and *C. o. macrocarpa*, remarkable for its large haws and excellent habit.

There were several other beautiful kinds interspersed about and worthy of mention, but to avoid being tedious to the patient reader, will refer to but two others, *C. o. stricta*, which assumes a close, upright form of growth, and its contrasting companion, *C. o. pendula*, of drooping or pendulous habit. There were many fine examples of American species, but having previously referred to and described them in the November MONTHLY of

1881, will conclude my remarks with the type I began with.

That the neat and graceful hawthorn should elicit admiration from all intelligent beholders is not surprising, when we consider how much its picturesque form has contributed to make replete the charm of many a fine landscape. * And that scenes of social enjoyment and domestic happiness should often occur about them, is most natural. Being such a companionable little tree, frequently found about our homes, we are apt to regard it with kindly feelings wherever seen, as a reminder of some cherished spot. And when found, as we often come upon it in the seclusion of some forest recess or deep sequestered glen, where its extreme loneliness claims attention, we feel as though we had discovered an old familiar friend. And while poetic lays, romantic legends, pleasing narrative and authentic history have the power to charm, will the legend of the Glastonbury thorn ever fail to interest the reader.

In quoting the following account from Loudon's *Arboretum et Fruticetum*, of 1854, I will briefly premise it with the statement that I have been a frequent witness to the peculiarity of the remarkable subject at issue, having seen it bearing blossoms and fruit at the same time in December, January, February, March, April and May.* It is known as *C. o. præcox*, the early flowering or Glastonbury thorn, and which, according to the Romish legend, once formed the staff of Joseph of Arimathea, and still exists within the precincts of the ancient Abbey of Glastonbury:

"It is said that Joseph of Arimathea, after the burial of Christ, came to England, attended by twelve companions, to found the first Christian church in this island, and guided by Divine impulse he proceeded to Glastonbury for that purpose. It was Christmas day when he arrived at the spot where he had been commanded to build a church to the honor of the Virgin Mary, and finding that the natives did not appear inclined to believe in his mission, he prayed to God to perform a miracle, to convince them. His prayer was immediately answered, and, striking his staff into the ground, it immediately shot forth into leaves and blossoms. And still blossoms annually on Christmas day."

While dwelling on this romantic subject, I cannot refrain from giving the historical account of the

*All of the many hawthorns raised from this remarkable tree retain the peculiar habit of blossoming and fruiting at an untimely season, often to the amazement of the credulous rustics, who regard them with superstitious awe.

C. o. regina, Queen Mary's thorn. "The parent tree is in a garden near Edinburgh, which once belonged to the Regent Murray. It is very old, and its branches have somewhat of a drooping character. The tree is thirty-three feet high; the trunk divides into two limbs at fifteen inches from the ground, one of which is one foot four inches in diameter, and the other one foot. The tree is healthy and vigorous, though if it be true Queen Mary sat under its shade, it must be nearly three hundred years old."

Both Greeks and Romans honored the hawthorn, having dedicated it to "Flora," whose festival began on May-day. And in many parts of rural England "Merry May-day" is still annually celebrated with innocent amusements, such as dancing round the Maypole, decked with garlands of hawthorn blossoms. And I pleasantly remember having seen a pretty little maiden, the village beauty, crowned with May or hawthorn blossoms, while her lovely young maids of honor sang the happy refrain—

"With pleasures abounding,
The May-pole surrounding,
We crown her the Queen of May-day; &c."

I would like to continue the subject, but as this is my second attempt to interest the gentle reader in behalf of the hawthorn, I must reluctantly leave much unsaid. I would fain add to the theme; but if my desultory remarks may only persuade the good tree-loving people to plant them about their homes, I shall have accomplished my purpose.

From a Germantown nursery catalogue before me, I see an excellent selection may be made of hawthorns, suitable for beautifying the home surroundings.

EDITORIAL NOTES.

GARDENING AND BUSINESS.—We have occasionally heard malicious remarks when some amateur horticulturist failed in business, that "gardening would ruin any man." It is often forgotten that hundreds will spend on one evening party, or some other luxury, what few amateur gardeners spend in a year. When Mr. Mechi, the celebrated agricultural experimenter failed, the ill-natured wrote of the "natural result of so much experimenting," that it "took a farm in the city to keep his farm in the country," and so forth. His daughter has at length been provoked to a reply in the *London Times*. A Mr. Pell had been rehashing the old dish of scandal, and the lady replies:

"Alluding to the circumstances of my father's death and connecting them with his farming operations, Mr. Pell says, 'the result was not a success.' I beg to state distinctly that my father's ruin was attributable solely and simply to the failure of the Unity Bank, in which, as a shareholder, he lost more than every shilling he possessed. To his successful farming, among other causes, he owed the delay of a catastrophe which had for some time been inevitable. It must remain a question of taste whether Mr. Pell has done wisely in affixing a stigma of 'agricultural loafers' to the many high-minded and honorable men who from all ranks of society have attended the Tiptree gatherings and witnessed the experiments conducted at them. In conclusion, I may add that during the last suffering days of my father's life his thoughts were not so much with himself or his troubles, not so much with family or friends, as with the cause he had long served faithfully and loved so well."

GIANT HORSE TAILS.—When some geologists tell us some sorts of coal may have been formed in times when there was little wind by the falling on the ground of the spores (the analogue of pollen in flowering plants) of cryptogamic plants, we naturally think of our small ferns, horse-tail and similar plants, and wonder as to how such things should be. But the plants were large, and probably the spores sized accordingly. The *Gardeners' Chronicle* aptly remarks:

"Representatives of the marsh vegetation of the ancient coal period would appear still to exist in South America; at least specimens of *Equisetum giganteum* from Brazil, which is said to have aerial stems of thirty feet, were exhibited by Mr. W. T. Thiselton Dyer, at the Linnean meeting on June 15. A forest of these would certainly carry the mind back to the time when our now coal beds were luxuriantly flourishing in the marshes of the period."

SUB-TROPICAL PLANTS for Industrial Culture or Naturalization—by Baron Ferdinand Von Mueller, has been translated into the German language. It shows alike the interest of the German people in all that relates to industrial improvement, as well as their appreciation of the work of the distinguished Australian botanist.

THE LONDON JOURNAL OF BOTANY—announces that unless better supported it will step out at the end of another year. In contrast with this is the support given to the two American magazines, the *Botanical Gazette* and the *Bulletin of the Torrey Botanical Club*, which though a long way from being gold mines, add to the number of their readers from year to year. With botanical taste growing continually, it is amazing to hear of poor support to botanical magazines. But the fact is that there is so much new in the "New Botany," that readers expect more than a mere chapter or

two, in the old style. The advanced botanist in these days, can scarcely go to the fields or woods for an afternoon jaunt, or take up a dried specimen without seeing something new and worth telling, and this is what the modern subscriber expects to read about.

VARIED TASTES IN FOOD.—A reporter of the *Philadelphia Press* called on Mr. Murrey, the chief cook of the Continental Hotel of this city, and gives us the following sketch of taste in cookery:

"Mr. Murrey is an enthusiast in this matter. He has read the Bible from Genesis to Revelation, and carefully conned every word written therein about food; Shakspeare is his constant companion, and he has collated over three hundred extracts from his writings referring to different dishes, principally salads; agricultural reports, which are too often to others a waste of paper, he scrutinizes with anxious eye to discover whether the tomato has been successfully grafted on the turnip, or if the carrot could not in some way be combined with the succulent cucumber; farmers' journals, giving the latest discoveries in the cultivation of fruits and vegetables, are to him precious presents, and, in a word, any book bearing upon food is of more value in his eyes than if it were on finance. And so, when the *Press* reporter approached Mr. Murrey with a request to be allowed to look at his collection, that gentleman, with evident pleasure, willingly agreed to submit it to inspection. And, in truth, it is a remarkable collection. He has, in one series of volumes, over ten thousand bills of fare, and in his library over five hundred books on cookery, and on matters appertaining to that subject. 'You are quite an enthusiast in this matter,' remarked the reporter.

"I am," was the ready response. 'I have been fifteen years making this collection, and if I live eighteen more it will be the finest in the world. May I ask you if you are interested in the subject.'

The reporter stated that he was—practically. That settled it. Instantly Mr. Murrey opened his book cases, emptied one shelf after another, piled up English, French and German works on cookery and pastry making, and so forth, and then to cap the climax he ordered up the reserves in the shape of the ten thousand bills of fare above referred to. 'There,' said he, with honest pride, 'there is a collection of which I am proud—where is its equal?'

"The writer gave the conundrum up and then went to examining the bills of fare.

"There were menus from Philadelphia, New York, Boston and Chicago; from Paris, from Rome and from Berlin; from St. Petersburg, from Vienna and from Copenhagen; bills of fare printed on white satin; on plain commercial note; on delicate tints, with letters of gold. There were bills of fare where royalty had sat at the table, where statesmen had dined, where heroes had wined; there were bills of fare which recalled the days when Daniel Webster was entertained at the great dinner in the Revere House, Boston, on January 18, 1856; when John Welsh departed to England as the American minister; when the Grand Duke Alexis,

of Russia, was entertained in New York; when the foreign commissioners to the great Centennial had their farewell banquet in St. George's Hall, with President Grant in the chair; bills of banquets, public and private; of great hotel dinners in the Old World and the new; of restaurants, American and continental; of dishes ranging all the way from plain 'pork and beans' to 'sante de daisans au fumet de Gibier.' Some of these bills of fare are well worthy of the closest attention, whether regarded from a literary or an epicurean standpoint; and, as a curiosity, the following bill of fare at the banquet to His Imperial Majesty the Sultan of Turkey, served at the Guildhall, London, during his visit, is worthy of some study:

"Potage poutoise a l'Albion; potage a la Victoria.

"Ris de veau a la Lucullus; filets de poulets a l'ecarlate; cotelettes aux haricots verts; croustades a la reine.

"Cailles a la Macedoine; crevettes en caisses, aspics de foies gras de Strasbourg; salade a la Russe; filets de soles a la Venitienne; buisson de truffes de Perigord; chartreuse a la Pariseinne; homard a la Venitienne.

"Saumon a la royale; galantine de volaille aux truffes; pate a la Francaise; jambon; pulets rotis; lanuge de boeuf; carre d'agneaux aux concombres; filet de boeuf a la Choisy.

"Celestine de fraises; peches a la Belle Vue; gelee au vin de Madere; gateau a la Princesse; ananas aux croutons; compote d'abricots.

"I find" said Mr. Murrey, as the writer hastily closed the last of his volumes of his collection of bills of fare, 'I find that there is even great difference in the tastes of Americans who come from various sections of this country. Now a Philadelphian will call for terrapin, calve's head a la secret, fillet de boeuf, etc.; the Bostonians, although it sounds so like satire to say so, do actually want pork and beans, when away from home; if not that, then rare roast beef seems to be their favorite diet; the Western men, too, are great beef-eaters, and are fond of fowl and game—solid food generally; Southern men are, as a rule, vegetarians. They are great salad eaters, and they can appreciate a salad when it is well made. Lamb is a familiar dish with them, and they can ask for it in a score of different ways. By-the-by, how many kinds of salads do you think there are?'

"The reporter guessed a dozen.

"There are hundreds,' continued Mr. Murrey, enthusiastically. 'Yes, hundreds. Why people know scarcely anything of this subject. Do you know that over one hundred dishes in different styles can be served of Indian corn? Why this subject is inexhaustible.'

"The reporter admitted the latter proposition.

"Mr. Murrey continued: 'Men come in here who have traveled all over the world, they ask for a certain dish, and not one of the waiters can imagine what they mean. They come to me. There are thirty-six hundred different dishes, and it is hard to keep the run of it. But we find it out. Oh, yes; we have all kinds of men to deal with. When Dom Pedro was here he asked for some queer dishes, but he always expressed himself delighted.

People have got over that old idea of crowding a hundred dishes on one bill of fare. It is not considered *en regle* now. A few clever dishes, well cooked, and of the very finest quality that can be got, is what is wanted now. Ten dollars per head is about the outside price for a banquet nowadays, but twenty was not considered exorbitant three or four years ago; of course that includes wines. And speaking of wines—'

"At this point the reporter begged to be excused. The sight of ten thousand bills of fare and five hundred cookery books was enough in one afternoon, and the wine question was postponed. The interview, however, demonstrated that Philadelphia contained the champion collector—so far as is at present known—in this department of literature."

MSS. TYPOGRAPHICAL ERRORS.—Annoying as they must always be to the author, are not always without a show of excuse on the part of the compositor. "Had" can be written so as to be perfectly made, and yet have the appearance of "has" to the typo, and "e'er" to look exactly like "e'en." Of course, if the compositor thought of anything else than to pick up each letter, he would know right from wrong by the sense. But when there is a choice, the wrong path is generally chosen; and this is what happened in Mr. Harding's acrostic.

EARLY HISTORY OF GARDEN FLOWERS.—The *Florist and Pomologist*, in a kindly notice of the late Edward Meehan, remarks: "He was one of the earlier improvers of the fuchsia and other garden flowers. His son, Professor Thomas Meehan, is Professor of Botany in the Academy of Natural Sciences of Philadelphia."

It may be worth noting that the improvement of the dahlia was among the earliest of his hobbies. "Springfield Rival," perhaps, among the first to bring this flower up to the florist's standard, was one of his raising.

He used to experiment largely with seedling chrysanthemums, but he took one called "Webber's Queen" as his standard of excellence, and could never feel that he raised one equal to it.

The first hybrid fuchsia ever raised, was probably "St. Clare." Fuchsia fulgens was introduced from Brazil about 1840. At any rate, in 1841 it bloomed at St. Clare, and was used as the male parent. The female parent, Fuchsia longiflora, was still standing, making a plant probably fifteen or twenty feet high when the writer saw it four years ago.

The seedlings bloomed the following year, "St. Clare" being considered the best of them. So strict was Mr. Meehan's idea of honor that he refused money offers for the plant, because the work on it was done in his employer's time, and it

was given to a leading nurseryman in exchange for new or rare plants, as were all the other good things he raised. The beautiful *Clianthus puniceus* was raised by him from seed brought home by a New Zealand missionary, and the *Diplacus aurantiacus*, set down in botanical works as of "origin unknown," was a cross of his between *Diplacus glutinosus* and *D. puniceus*.

He was among the first to start the present popular race of silver-leaved geraniums. There was a loose growing variegated kind known as the "Mangles" long in cultivation, and an old scarlet known as the "Salmon." This last was the male parent. From this cross came "St. Clare," which was such a decided advance that it has scarcely yet gone out of cultivation. This was given to or exchanged with the same florist, we believe, to whom "Springfield Rival" dahlia was given.

Professor Meehan's title comes chiefly from his position in the State Board of Agriculture of Pennsylvania, though he also holds that honorary title in other bodies. His position in the Academy of Natural Sciences (except as Senior Vice President) is simply Vice Director of the Botanical Section, to all three of which he has been annually elected for some years past.

A PLEASANT NOTE FROM A YOUNG GARDENER.—A correspondent says: "I do wish that some of our older plant and fruit growers would favor us occasionally with notes of their experience. It would prove of great benefit to all young gardeners, myself included, as I am not yet thirty, and feel I have much to learn from persons older than I am."

SIR HUGH ALLAN.—The death of the principal owner of the Allan line of steamers reminds us that horticulture, as well as business enterprise, loses a zealous patron. His residence at Montreal was one of the beauty spots of the Dominion, while the more extensive grounds on Lake Memphremagog furnished a specimen of excellent taste in landscape gardening as adapted to wild lake scenery.

The Montreal suburban residence is apparently on about ten acres of ground, and the building is a model of elegance and taste in the hands of abundant wealth. The walled-in kitchen and fruit garden abounds in the best kinds of fruits, and along the most protected sides are extensive ranges of glass, in which peaches, grapes and other fruits are raised to great perfection. The several plathouses are connected with the "ball room" front of the dwelling-house, though they

extend away a long distance from the dwelling, and in the main appear as distinct structures. New and rare plants are added as they appear, though majestic specimens of the older and valuable species have their honored places. Perhaps the point of excellence which has made the most lasting impression on the writer of this, who made a hasty call in September last, was the perfect neatness and cleanliness which pervaded every part of the grounds. Not a dead leaf, rotten branch or weed was to be seen anywhere. To our mind there is nothing tests the ability of a gardener as this. The general rule is for places like this to be laid out, with work enough for a dozen men to keep in order, but which the proprietor who never thought of this at the outset, insists must be kept up by half or less. Even when enough to do justice to a large place is allowed, the gardener too often falls into slovenly ways. By this test we should regard Mr. Dunbar, Sir H. Allan's gardener, as among the head of the class.

JOSEPH E. JOHNSON.—The Salt Lake papers note the death of Joseph E. Johnson, who is well known to horticulturists and botanists for the interest he took in developing the floral knowledge of Utah Territory. In compliment to his zeal and industry many plants bear his name, as for instance *Dalea Johnsonii*, being very beautiful flowers.

He was a printer, and a man of indomitable energy. He once went to a new settlement and started a newspaper, setting up the type and printing the whole paper himself, with only a tree and wild nature for the printing office. St. George's, in Utah, especially owes much to his energy.

At the time of his death he was engaged in pushing a new settlement in Arizona, and it is not long since the writer of this had a letter from him speaking in glowing terms of his prospects of success.

THE REGULATIVE ACTION OF BIRDS ON INSECT OSCILLATION.—By S. A. Forbes. In the "Bulletin of the Illinois State Laboratory of Natural History, December, 1882," is a scientific paper of great practical utility in regard to the influence of birds in keeping down the canker-worm. The paper is so full of important details that it is impossible to give a brief abstract of it, and those who are able to get it will do well to read the whole. The facts have a great bearing on many practical questions besides the one which Mr. Forbes proposed for solution. The point we have often made, that there is really a very narrow line between insectivorous and frugivorous birds, is clearly brought out here.

Birds will not starve. When they cannot get vegetable food they take to animal, and the reverse under other circumstances. Mr. Forbes shot his birds on the 24th of May, 1881, and 20th of May, 1882, and the contents of the craw showed that all the birds fed on animal food. At that early season there are few seeds to be had. Some birds had seeds of asters and other Compositæ, bristle grass (*Setaria*, which by the way has the name of pigeon grass in this paper), and seeds of a few other plants which perhaps were kept from distribution under the snow. Birds like the woodpecker seem to have no compunction about stealing the farmer's new-sown corn in a pinch; and such kinds as the yellow bird, riot on insect food.

An interesting item in this experience is that different birds seem to prefer different kinds of insects, but on analysis this is found not so much a matter of gastronomics as of strength or peculiar habits of the bird. The robin for instance was found to use cut-worms and other terrestrial creatures, to an enormous extent. The canker worm, which abounded in the orchard, was barely touched. The yellow bird had two-thirds of the total amount eaten of canker worms. We can see that the superior strength of the robin, and its habit of being frequently on the ground, give it advantages for searching for earth-loving creatures which the yellow-bird does not possess.

As to the leading question proposed, the influence on keeping down the canker-worm, the great question remains in how far does the enormous number eaten by the birds, aid the fruit grower? It is evidently the design of nature that a very large proportion of that which is created shall serve as food for the others, and that after all this has been accomplished, there shall still be enough left to reproduce the species. The forty-five acres of apple-trees of Mr. J. W. Robinson, in Tazewell County, Illinois, wherein these birds were caught, has been infested by canker worms for six years to such an extent that the orchard looks annually as if fired.

Under the pressure of little other food, even graminivorous birds have been compelled to feed on canker worms. Millions must have been annually destroyed, but still the annual destruction to the leaves of the trees goes on.

To our mind the law is that man must be his own great protector. In the war against insects retail efforts are of little avail. He must either guard his trees so that insect enemies cannot get at them, or wholesale destruction be completely at command.

HORTICULTURAL DIRECTORY for 1883, twenty-

fourth edition. Published at the *Journal of Horticulture* office, London, England. This gives a complete list of the nurserymen, seedsmen, florists, gentlemen and ladies who have fine gardens, and their gardeners, of England and the "Continent," which seems to include the United States, Japan and the rest of the world outside of the British Isles. As an illustration of how words change in time in different parts of the world, we note that the districts here are divided into "London, Metropolitan and Country." In this part of the world metropolis is the chief city of a country, and London would be regarded as the metropolis of England, and metropolitan that which related to the city. But in England, as we judge from the Directory, metropolitan is applied to the towns and cities for some thirty miles or so surrounding the city, or distinct from the city itself.

SCRAPS AND QUERIES.

TO INTELLIGENT CORRESPONDENTS.—*All communications relating to advertisements, subscriptions, or other business, must be addressed to the publisher, 814 Chestnut Street, Philadelphia.*

All referring to the reading matter of the magazine must be mailed to the editor, Germantown, Pa.

No express packages for the editor received unless prepaid; and marked "Paid through to Germantown, Pa."

PORES IN THE ANNUAL LAYER OF WOOD.—A correspondent says: "Will the editor of the *GARDENERS' MONTHLY*, please help a reader who somehow cannot make out what he means to say on page 20 of the January number. A cut used in Dr. Houghs' "Elements of Forestry," represented the porous part of the annual layers of oak wood, as the inner part of the layer, that is, as the first formed portion of the annual growth. I understood the editor to say, two or three months ago, that the cut was wrong in this respect, and that this porous part, consisting largely of ducts, really belongs to the outer or latest part of each layer. Now, on reading the editorial notes on page 20 of the January number, I can't make out whether the editor means to tell us that the cut was right or wrong in this particular. It must be either one way or the other, and I presume the editor is clear in his own mind about it. But either he has not expressed his mind altogether or else the writer of this inquiry must subscribe himself

A Dull Reader."

[The cut in Dr. Houghs' "Elements of Forestry" was right in that respect. The editor of the *GARDENERS' MONTHLY* was wrong. Ed. G. M.]

HORTICULTURAL SOCIETIES.

EDITORIAL NOTES.

PREMIUMS AT HORTICULTURAL EXHIBITIONS.

The Georgia Horticultural Society has adopted a by-law which provides that no medal, diploma or money shall be awarded by this society as a testimonial of excellence for any fruit, plant, flower or vegetable offered for exhibition. The verdict of the special committee shall be the highest commendation of the society. We should hardly suppose that such a great departure from established custom will be a success. But there is nothing like a practical test, and we are glad the Georgia Society undertakes it.

It seems to us the true line of reform is in discriminating verdicts, the jury giving the reasons for the excellence, and the society taking the steps by wide publicity to do honor to their own verdict and to the merits of the exhibitor. The most praiseful verdict is of little satisfaction to the exhibitor if he has to put the record of it between the covers of some book in his library. To be of any real value to him he must "blow his own horn," in regard to it in the end. If the societies were to take this "blowing of the horn" in their hands, it might then be some fair set-off for the lack of money premiums. At any rate we are glad that the action of the Georgia Society, looks like the beginning of the examination into the old stupid system of competition which we have so long urged as needing reform.

REPORTS OF HORTICULTURAL SOCIETIES.—It is a pleasure to note that the efforts of the GARDENERS' MONTHLY in the line of judicial comparative reports of committees, are being seconded by Mr. Murkland, the Secretary of the New York Horticultural Society. In his last annual report he says: "And here just a few words to our Committee on Plants and Flowers, and I speak as to men who have the honor to frame a report each month which is read in many different states and abroad, as the report of one of the leading horticultural societies in our Union. Noteworthy exhibits, too, should be described in such a manner that readers who have not been privileged to attend our meetings

may have the exhibition tables spread before them in your report. Pardon me if I refer to some of the reports of the past year. For instance, in that of last March we find the following: 'From Wm. Bennett, a *Dendrobium aggregatum majus*. Extra good.' There are many such comments throughout the reports of the year. Undoubtedly the specimen was 'extra good,' but had I not seen the plant I would have wondered what an extra good plant was like, and if I were an inexperienced orchid grower, with a specimen of the same variety fifteen inches high, having four spikes of thirteen large perfect flowers each, I would have, from reading the report only, vainly wondered how my plant compared with the one shown. And it must be remembered that besides our membership in New York and vicinity we have members in Massachusetts, Connecticut, Pennsylvania, Illinois, Ohio, Wisconsin, and Michigan, whose personal contact with our exhibitions is confined to reading your reports."

AMATEURS AND FLORISTS.—In future there will be two classes of exhibitors in the New York Horticultural Society. Those who grow plants or flowers for sale will not compete with those who grow for pleasure merely.

THE AMERICAN POMOLOGICAL SOCIETY.—This body meets only biennially. The next session will be held in Philadelphia on the 12th, 13th and 14th of September, 1883.

President Wilder is working hard to make this meeting one long to be remembered, in which effort he is seconded by President Schaffer of the Pennsylvania Horticultural Society.

HALL OF THE NEW YORK HORTICULTURAL SOCIETY.—This building, costing \$100,000, has been purchased solely by the Amateur Horticulturists of New York, in the pure love of horticulture. Thirty-six paid for the whole, of whom seventeen subscribed \$5,000 each, six \$2,000, and thirteen \$1,000. It is interesting to note that of those interested in horticulture in New York, there are more able to give \$5,000 each than of lower sums.

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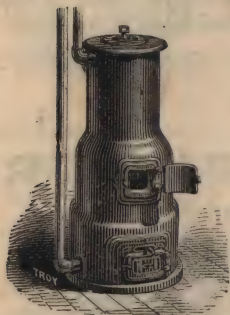
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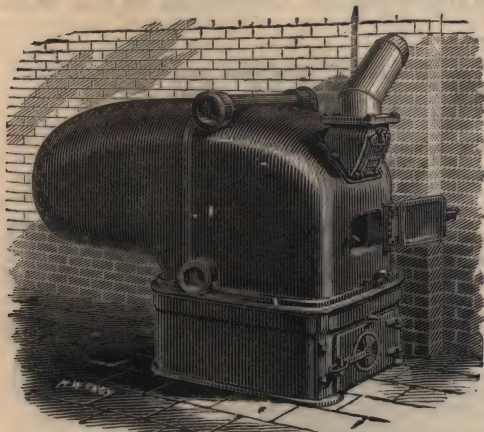
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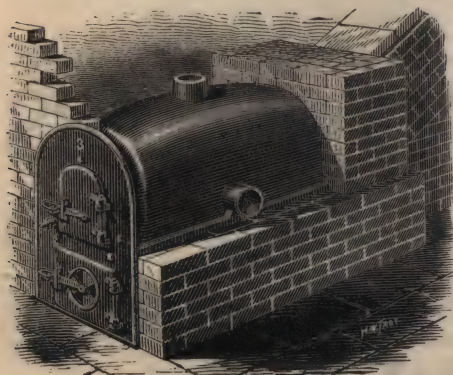
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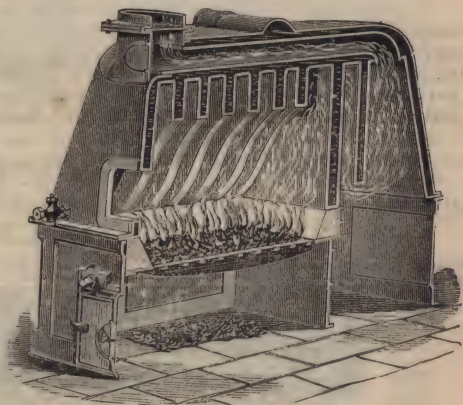
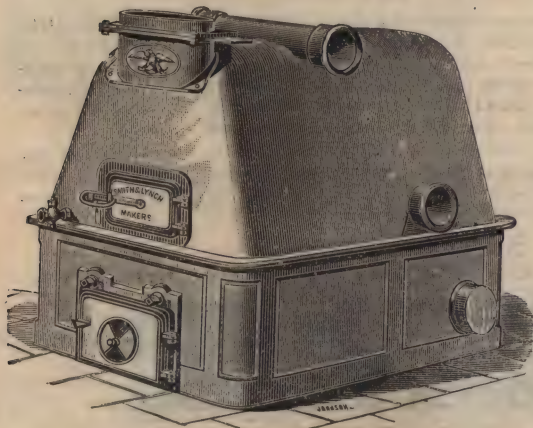
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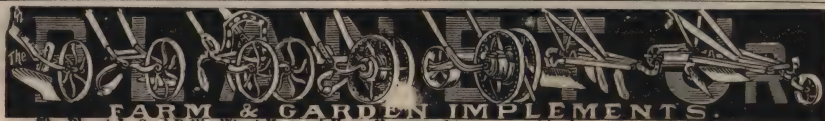
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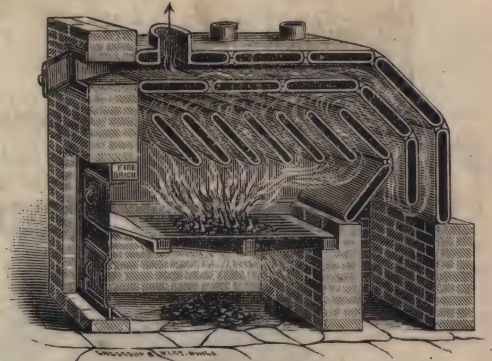
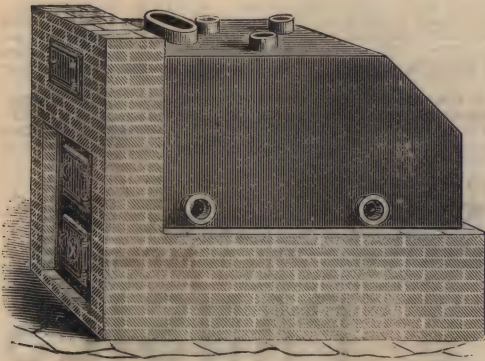
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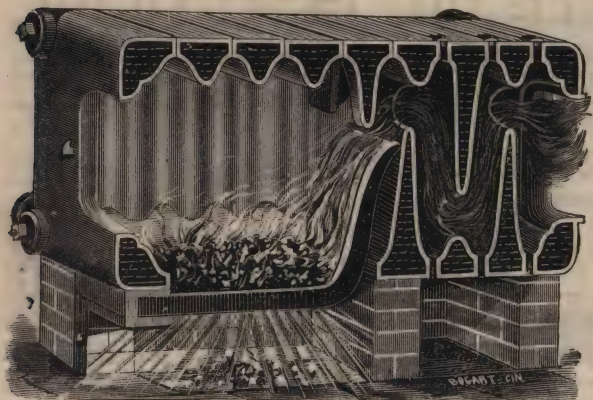
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
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
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
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Beg to inform their friends and customers generally that their

New List for 1882 and 1883

Is now ready and may be had on application to

Messrs. Knauth, Nachod & Kuhne,
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This Catalogue contains Prices of all the **Fruit Tree Stocks**; an extensive list of **Fruit Trees**, New and Hardy Ornamental Plants, Climbers, the Hardest and Best Conifers, Roses on their own roots. Also, Small Conifers, Deciduous and Evergreen Ornamental Trees, one or two years' seedlings, most useful for Nurserymen.

N. B.—The greatest attention given to packing.

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Your time or money renting a farm
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Fine FARM and HOME
With the **BEST MARKETS**
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New Carnation
New Carnation

President JAMES A. GARFIELD.

— Color, English Vermilion. —

MRS. GARFIELD.

— Color, Chinese Pink. —

Only a few more stock plants on hand of these wonderful Carnations at 50c. each; \$5.00 per dozen. Well established young plants, from 2-inch pots, at \$1.50 per dozen; \$8.00 per 100. Will be ready about February 1st.

Rooted Cuttings, from cutting bench, at \$4.00 per 100; \$30.00 per 1000. Orders booked and filled in rotation.

Not less than six plants will be sold at dozen rates; not less than fifty at hundred rates. Cut Blooms in large numbers at market prices. Send ten-cent stamp for sample florets.

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CHEAP PLANTS.

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| ROSES, Everblooming, 2 ½-inch pots..... | \$6.00 per 100 ; \$50.00 per 1000 |
| “ “ 3-inch “ | 8.00 “ |
| GERANIUMS, Double and Single, 2 ½-inch pots..... | 4.50 “ \$40.00 per 1000 |
| “ “ 3-inch “ | 6.00 “ 50.00 “ |
| BEGONIA RUBRA, Strong Plants..... | 8.00 “ |
| PANSIES, from a fine strain | 3.00 “ |

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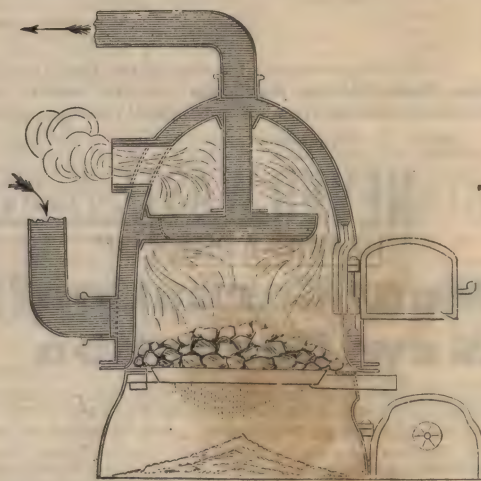
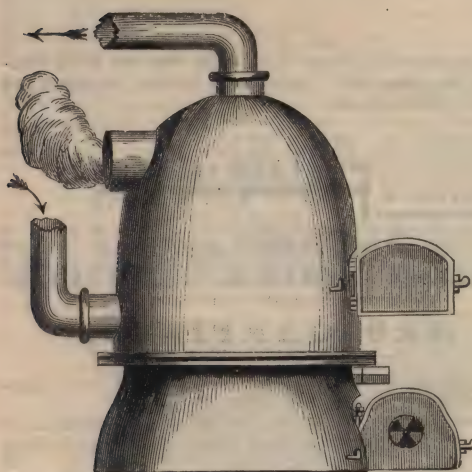
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Patent Ventilating Apparatus,
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NEW AND POPULAR PLANTS FOR SPRING TRADE!

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| | Each | Doz. | Hund. |
|---|------|--------|---------|
| Allamanda Schottii, flowers yellow, in clusters..... | 20 | \$1 80 | ... |
| Anthurium Dechardii, flowers white..... | 30 | 3 00 | ... |
| Alternanthera aurea, new golden..... | .. | 75 | \$ 5 00 |
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| Ampelopsis Veitchii, lovely hardy climber..... | .. | 1 00 | 8 00 |
| Antigonon leptophyllus, desirable summer climber, flowers pink..... | 30 | 3 00 | 20 00 |
| Begonia Louis Chertin, the handsomest of all variegated Begonias..... | 25 | 2 40 | 15 00 |
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| President Garfield, TRUE, double pink, grown from cuttings..... | 30 | 3 00 | ... |
| Coleus Progress (New of 1883), distinct from all others..... | 30 | 3 00 | ... |
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| Crotons, fine assortment..... | .. | 2 00 | 15 00 |
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| Daphne odora, flowers very fragrant, 2-inch..... | .. | 1 50 | 10 00 |
| Dracænas, good assortment..... | .. | 3 00 | 25 00 |
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| sambac fl. pl., double flowering, exquisite fragrance..... | 25 | 2 40 | ... |
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| Lygodium scandens, climbing fern..... | .. | 1 00 | 8 00 |
| Olea fragrans, sweet olive..... | .. | 1 50 | 10 00 |
| Poinsettia plenissima, new double..... | .. | 1 80 | 12 00 |
| Phlox, White Lady, hardy, herbaceous, white flowering..... | .. | 1 00 | 8 00 |
| Phyllanthus rosea picta, handsome foliage..... | .. | 3 00 | 20 00 |
| Passiflora quadrangularis, foliage beautifully variegated..... | .. | 2 40 | 15 00 |
| Plumbago rosea, pink flowered..... | 20 | 1 80 | ... |
| Thunbergia fragrans, white flowering, climbing..... | .. | 1 00 | 8 00 |

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| Marle Van Houtli, | Marechal Niel, | Catharine Mermet, | 2-inch..... | \$8 00 per 100 |
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ROSES.

| | | |
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| Etoile de Lyon (new), canary yellow, a promising rose..... | 50 | \$5 00 |
| Paquerette, pure white, small, flowers in clusters..... | 30 | 3 00 |
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Countess of Pembroke, Distinction, Princess of Wales, Earl of Pembroke,
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Roses (William Bennett's) of 1881.

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| DUKE OF CONNAUGHT, | HON. GEO. BANCROFT, | NANCY LEE, | JEAN SISLEY, |
| BEAUTY OF STAPLEFORD, | MICHAEL SAUNDERS, | PEARL, | DUCHESS OF WESTMINSTER. |
| The set of 8 for \$2.00. | | | |

Spring Trade List, with New Descriptive Catalogue for 1883, mailed to all applicants after February 10th. Address

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THE MOST DISTINCT, EFFECTIVE AND VALUABLE BEDDING PLANT INTRODUCED IN MANY YEARS, AND ONE THAT HAS COME TO STAY!

It supplies a long-felt want, with certainty, in giving a rich yellow effect in carpet and ribbon gardening which has long been needed. It has never before been sent out, but is **no untried novelty, having been thoroughly tested the past two seasons**, during which it has had a local reputation and has, without a single exception, kept its color under all conditions and exposures, holding its color during the hottest and driest times. It has the **unqualified endorsement** of such noted gardeners as **Ferdinand Mangold**, Gardener for **Jay Gould**; **John Egan**, Gardener for **H. B. Hyde**, Pres. Equitable Life Insurance Co.; **Mr. Dravey**, Gardener for **Lloyd Aspinwall Estate**; **N. J. Connelan**, Gardener for **W. H. Webb**, the noted shipbuilder, and all others who have seen it.

For testimonials as to its value, full description and prices, see our Illustrated Catalogue of

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Of all kinds for Country Homes, for 1883. Sent FREE to all readers of the MONTHLY.

F. R. PIERSON & CO., Florists and Seedsmen,
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Also, the largest holders of *Lilium longiflorum floribunda* or *L. Harris* or the *Bermuda Easter Lily*, in the United States—the most valuable lily for forcing for winter flowers. tf4

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What my customers say: "The Onion Seed was superior to any I ever had,"—*S. W. Seaman, Motts Corners, N. Y.* "I can get seed in my own neighborhood, but, prefer yours at double the price,"—*N. P. Watts, Perry, Ohio.* "Your seed is the only seed from which we can raise good Onions the first year,"—*J. M. L. Parker, Ahnapee Wis.* "I have used your seed for six years and had rather pay \$2.00 per lb. extra than have seed from any other source,"—*A. T. Myers, Turners Mills, Iowa.* "The Danvers Onions from your seed grew larger than any onions around here,"—*Phillipsburg, Warren Co., N. J.* "Your early Red Globe yielded at rate of 948 bush,"—*Silas Totten, Kent City, Mich.* This is just the kind of onion seed I have to offer. Last year planted as a test side by side with seed from eleven different growers, the onions from my own markedly surpassed all in roundness, earliness and fineness. If those of you who grow red onions will try my Early Red Globe you will not be likely to raise any other for the future. Early Round Yellow Danvers by mail per lb. \$2.65; Early Red Globe \$3.00; Yellow Cracker (earliest of all) \$3.00; Large Red Wethershead, \$2.50. My large Seed Catalogue free to all. **JAMES J. H. GREGORY, Marblehead, Mass.**

ONION

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I have a large and selected stock of young Roses, last Fall's Propagation, for sale, and in order to make space for other crops I offer my entire stock of **150,000 Roses**, healthy and vigorous, all grown in 2-inch pots, without any forcing or stimulants whatever, at below named low prices:

Tea Roses in 50 leading sorts:

\$5 per 100; \$40 per 1000; \$350 per 10,000.

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Moss Roses in 15 best sorts:

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China, Bengal and some 20 sorts of Teas, Noisettes, etc., but invariably my selection:

\$4 per 100; \$35 per 1,000.

ALL READY FEBRUARY 15th.

For shifting into larger pots, to force into bloom, for Spring sales in April, May and June, or for shipping through the mails, these Roses cannot be surpassed. I guarantee satisfaction in every instance. Send for **List of Sorts Special Quotations for Special Sorts. Correspondence solicited.** Visitors to Louisville are invited to visit my houses situated on **L. C., & L. R. R.**, 20 minutes ride from Louisville, Ky.

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| Alyssum Gem, double variegated..... | doz. \$100 |
| Ampelopsis Veitchi..... | 75 \$8 00 |
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COLEUS PROGRESS Leaves lanceolate, acuminate and dentated. Ground color dark olive green, blotched with purple, crimson and gold; the latter color predominating. The most distinct yet introduced from **J. VEITCH & SONS.**

COLEUS BEAUTY A seedling raised by us; the leaves are deeply divided, edged with green and yellow; the ground color is of a bright red, changing to deep purple; it is of compact habit.

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| " Garland..... | | " Crusader..... | |
| " Mrs. Geddis..... | | " Royal Scarlet..... | |
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Fuchsia Agura Superba, Double..... 50c. each.
" **Mastodontes.....**

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We have a fine stock of two-year

AMPELOPSIS VEITCHII,

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Special prices to the Trade on application.

Also, a fine stock of imported

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NAMED, HARDY VARIETIES,

20 to 30 inches,

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FAY'S PROLIFIC. Thoroughbred LAND and

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NEW GOLDEN COLEUS,

CHAS. F. KOESTER.

The finest golden Coleus for bedding in full sun, color rich golden yellow, (not lemon as heretofore sent out). Fine grower and takes the lead as a bedder. Price 50 cents each; \$3.00 per doz; free by mail.

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Novelties in Quantity, including the Best New Chrysanthemums, Geraniums and Fuchsias.

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LATANIA BORBONICA—1 ft., 4 or 5 leaves, from 5-in. pots. \$2 per doz.; \$16 per 100.

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First-class vines, and next Fall hope to be able to **SUPPLY ALL** with one and two-year old vines, from the original
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Catalpa speciosa, European Larch, American White
Ash, Pine, Spruce, Arborvitae, &c., &c.
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Camellias and Azaleas a specialty.
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In bales weighing 500 lbs. each, at **\$5.00** per bale, or three
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10,000 Peach Trees 1 year, first class, 4 to 6 ft.,
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1,000 PLUM ON PEACH, 2 years, per 100, \$15.

A general assortment of Nursery Stock for sale by ja3
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about 175 pages, 600 illustrations, prices, accurate
descriptions and valuable directions for planting
1500 varieties of Vegetable and Flower Seeds,
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10 for \$1; 21 for \$2. Geraniums, 12 for \$1. Carnations,
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25 packets, \$1 Hundreds of varieties—many new and
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ROSES, NIPHETOS, PEARLS, BON SILENE, DOUGLAS,
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\$5 to \$20 per day at home. Samples worth \$5 free. Ad-
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Park, Street AND Lawn Planting SPLENDID LOT.

—CONSISTING OF—

American Elm, English Alder, European Ash, White Ash, Silver-leaved Maple, Rock or Sugar Maple and Lombardy Poplar, 6 to 8, 8 to 10, 10 to 12 and 12 to 15 feet. Catalpa Speciosa, Ash-leaved Maple, American Linden, Campestria Elm and Laurel-leaved Willow, 6 to 8 and 8 to 10 feet. American and European Mountain Ash, 8 to 10 feet. European Larch and Deciduous Cypress, 4 to 6 and 6 to 8 feet.

The above in surplus. Many other sorts in smaller quantities.

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RHODODENDRONS, HYBRID CATAWBIENSE, Etc.,

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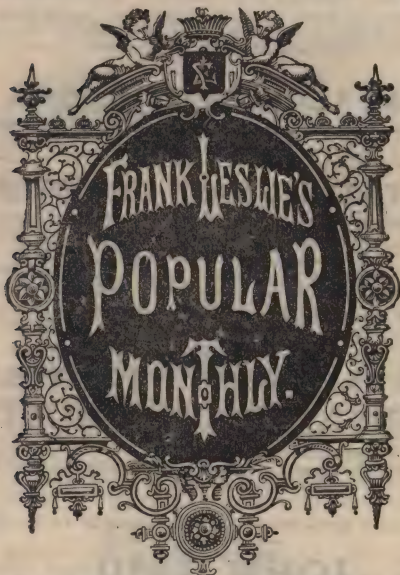
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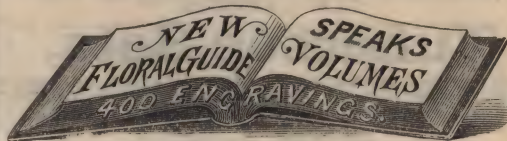
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| | |
|--|---------------------------|
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| Barnes O. M., Lansing, Mich. | 13 |
| Bell W. T., Franklin, Pa. | 30 |
| Benz Albert, Little Neck, L. I., N. Y. | 8 |
| Blanc A., Philadelphia. | 16 |
| Bliss B. K. & Sons, New York. | Cover |
| Bohmer Louis, Yokohama, Japan. | 25 |
| Breitmeyer Jno. & Son, Detroit, Mich. | 13 |
| Bridgeman Alfred, New York. | 9 |
| Burrow J. G., Fishkill, N. Y. | 30 |
| Bush & Son & Meissner, Bushberg, Mo. | 19 |
| Business Directory. | 9 |
| Butz Paul & Sons, New Castle, Pa. | 19 |
| Cannell H. & Sons, Swanley, Kent, Eng. | 9, 22 |
| Carmody J. D., Evansville, Ind. | 10 |
| Charlton John, Rochester, N. Y. | 19 |
| Churchman J., Burlington, N. J. | 9 |
| Collins J., Moorestown, N. J. | 20 |
| Cowan A. D. & Co., New York. | 8 |
| Cowen N. & Son, New York. | 30 |
| Davis M. J., Hackensack, N. J. | 29 |
| Dick John Jr., Philadelphia. | 12, 19 |
| Dingee & Conard Co., West Grove, Pa. | 2 |
| Douglas R. & Son, Waukegan, Ills. | 19 |
| Dreer Henry A., Philadelphia. | 9, 12, 16, 19, 20, 21, 22 |
| Eggleston Truss Co., Chicago, Ills. | 11 |
| Elder Walter, Philadelphia. | 17 |
| Ellwanger & Barry, Rochester, N. Y. | 21 |
| Engle & Bro., Marietta, Pa. | 4 |
| Exeter Machine Works, Boston and Exeter, N. H. | Cover |
| Ferguson David & Sons, Philadelphia. | 16, 25 |
| Ferry D. M. & Co., Detroit, Mich. | 19 |
| Graham & Johnson, Reynoldsburg, O. | 21 |
| Gravett John, Lancaster, O. | 30 |
| Gray Walter, Cincinnati, O. | 21 |
| Gregory James J. H., Marblehead, Mass. | 6, 16 |
| Haines R. H., Moorestown, N. J. | 9 |
| Hale Brothers, South Glastonbury, Conn. | 17 |
| Hales H. W., Ridgewood, N. J. | 8, 22 |
| Hallett H. & Co., Portland, Maine. | 17 |
| Halliday Robert J., Baltimore, Md. | 15 |
| Hallock V. H., Son & Thorpe, Queens, N. Y. | 17 |
| Henderson Peter & Co., New York. | 1 |
| Herald Publishing Co., Tavares, Fla. | 20 |
| Hitchings & Co., New York. | 3 |
| Hooker H. E., Rochester, N. Y. | 24 |
| Hubbard T. S., Fredonia, N. Y. | Fly-leaf, 11 |
| Jenkins J., Winona, Ohio. | 11 |
| Johnson I. S. & Co., Boston, Mass. | 6 |
| Josselyn Geo. S., Fredonia, N. Y. | 17 |
| Knauth, Nachod & Kuhne, New York. | 13 |
| Landreth D. & Sons, Philadelphia. | Fly-leaf, 18 |
| Leslie Mrs. Frank, New York. | 22 |
| Lovett J. T., Little Silver, N. J. | 24 |
| Mann Bros., Randolph, Mass. | 21 |
| Marschuetz & Bacharach, Philadelphia. | 6 |
| Meehan Thomas, Germantown, Phila. | 8, 11 |
| Merrihew Murray E., Cincinnati, O. | 26 |
| Michel Plant and Seed Co., St. Louis, Mo. | 13 |
| Miller & Hunt, Chicago, Ills. | 12 |
| Moon Samuel C., Morrisville, Pa. | 10 |
| Myers John H., Saratoga Springs, N. Y. | 30 |
| Mylius August D., Detroit, Mich. | 4 |
| Nanz & Neuner, Louisville, Ky. | 18 |
| Neuner C., St. Matthews, Ky. | 16 |
| Nielson Hans, St. Joseph, Mo. | 17 |
| Noble Charles, Bagshot, Surrey, Eng. | 10 |
| Oliver Bros., Lockport, N. Y. | Cover |
| Parry Wm., Parry P. O., N. J. | 17 |
| Parsons & Sons Co., Flushing, N. Y. | Cover |
| Peters Randolph, Wilmington, Del. | 21 |
| Phillips W. R., Milford, Del. | 23 |
| Pierson F. R. & Co., Tarrytown, N. Y. | 16 |
| Pullen A., Milford, Del. | 4 |
| Purdy A. M., Palmyra, N. Y. | 9 |
| Raoux C., New York. | 18 |
| Rathbun Mrs. R. H., South Amboy, N. J. | 29 |
| Reeves Robert C., New York. | 9 |
| Reynolds Benj., Norfolk, Va. | 6 |
| Rideout E. G. & Co., New York. | 17 |
| Rolker Jerome B. & Co., Cambridge, N. Y. | 17 |
| Rolker August & Sons, New York. | 11 |
| Saul John, Washington, D. C. | 20, 21 |
| Schultheis Bros., New York. | 23 |
| Scott Alex., Waverly, Md. | 18 |
| Seal Thomas F., Unionville, Chester Co., Pa. | 6 |
| Sibley Hiram & Co., Rochester, N. Y. | 11 |

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|--|----------|
| Smith David, Boston, Mass. | 5 |
| Snow Dexter, Chicopee, Mass. | 21 |
| Stewart Wm. J., Philadelphia and Boston. | 9 |
| Stinson & Co., Portland, Maine. | 19 |
| Stone Geo. A., Rochester, N. Y. | 17 |
| Storrs & Harrison Co., Painesville, O. | 20 |
| Straiton & Storm, New York. | 19 |
| Swain R. A., Philadelphia. | 7 |
| Taber W. B. & W. M., Detroit, Mich. | 4 |
| Terwilliger S. F., Saratoga Springs, N. Y. | 21 |
| Thomas Harrow Co., Geneva, N. Y. | 30 |
| Thomas Jos. W., King of Prussia, Pa. | 19 |
| Thorburn J. M. & Co., New York. | Fly-leaf |
| Thorburn & Titus, New York. | 17 |
| Transon P. & E., Orleans, France. | 13 |
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| Vaughan J. C., Chicago, Ill. | Fly-leaf |
| Vick James, Rochester, N. Y. | Fly-leaf |
| Wales George S., Rochester, N. Y. | 21 |
| Walz L., Denver, Col. | 29 |
| Weathered Thomas W., New York. | 14 |
| Weinhold R., Los Angeles, Southern California. | 20 |
| Welch Bros., Boston, Mass. | 8 |
| Wood I. C. & Bro., Fishkill, N. Y. | 10, 19 |
| Woolson & Co., Passaic, N. J. | 6 |
| Young & Elliott, New York. | 10 |

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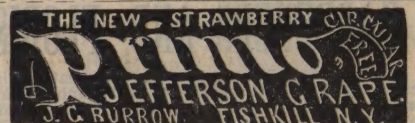
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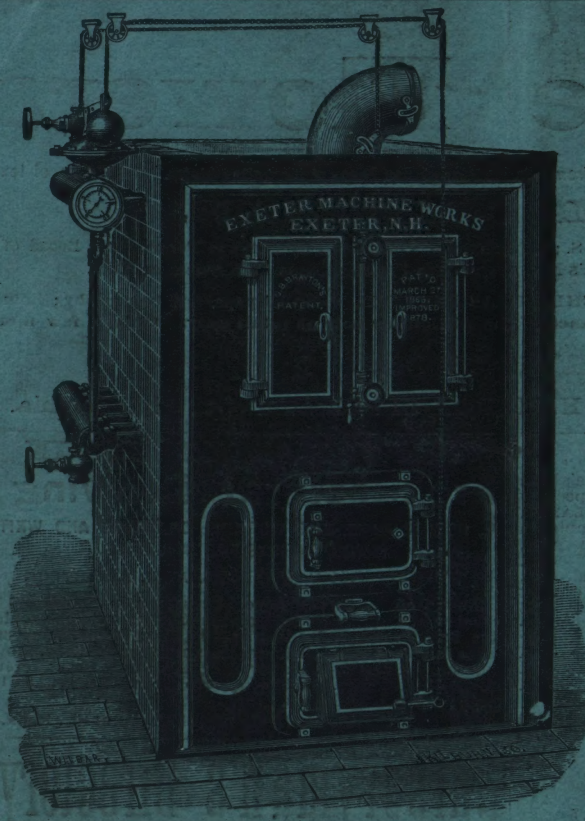
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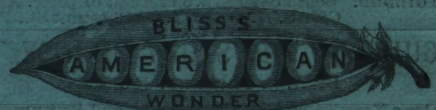
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